

Brought to you by:
Jim Miller & Matt Petrie



Powertrain Control Solutions.com
Engineering the future of driveline control

Ground Support Datalog Tips & Tricks

Harness ID



Located at the TCM breakout

Download the circuit diagram from

www.gsehelp.com

TCM-4635-001

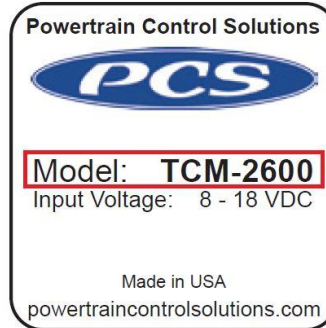
← PCS Part #

4L70E 2010+
TO 2600

← Description

TCM ID

TCM FRONT



Model #

TCM REAR

Model #

Model: **A-TCM2800**

Serial:2515

Firmware:3.160.8

Date:04/06/18

SO#:12152

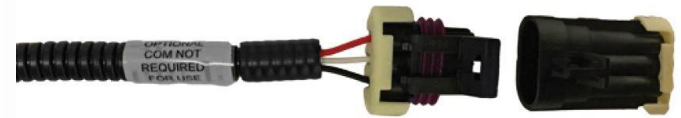
Cal: EPS J1939 With Shutdown and Fuel Level

Manufactured by Powertrain Control Solutions, LLC.



TCM Communication Cable

- Trans controller is accessed via a serial data interface and a Windows laptop
- The serial data interface cable kit is available from PCS. PN# TCM4640

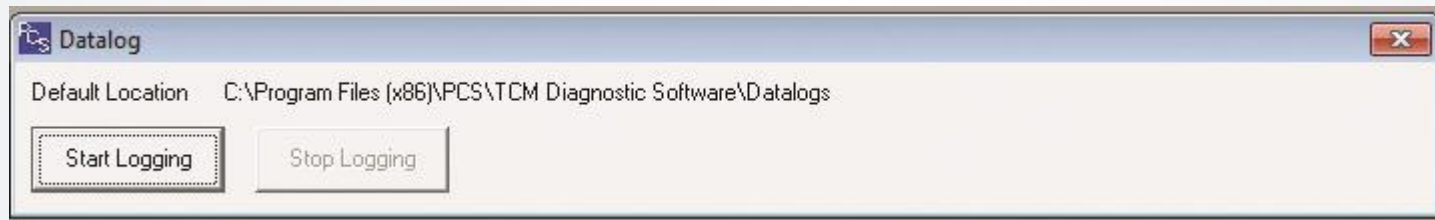
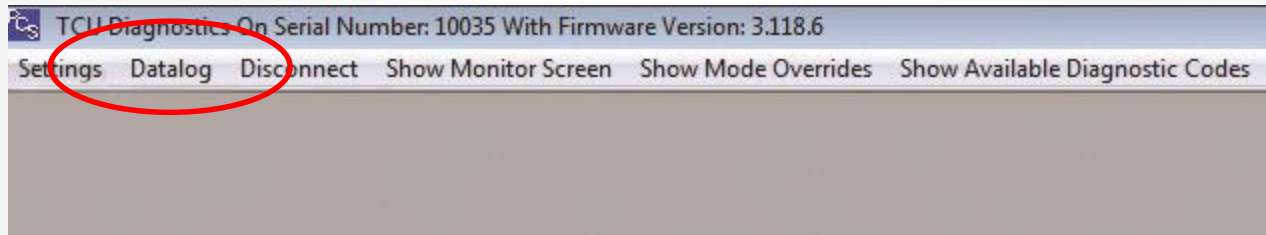


Labeled "OPTIONAL COM NOT REQUIRED FOR USE."

When not in use cap is required.



Data Log

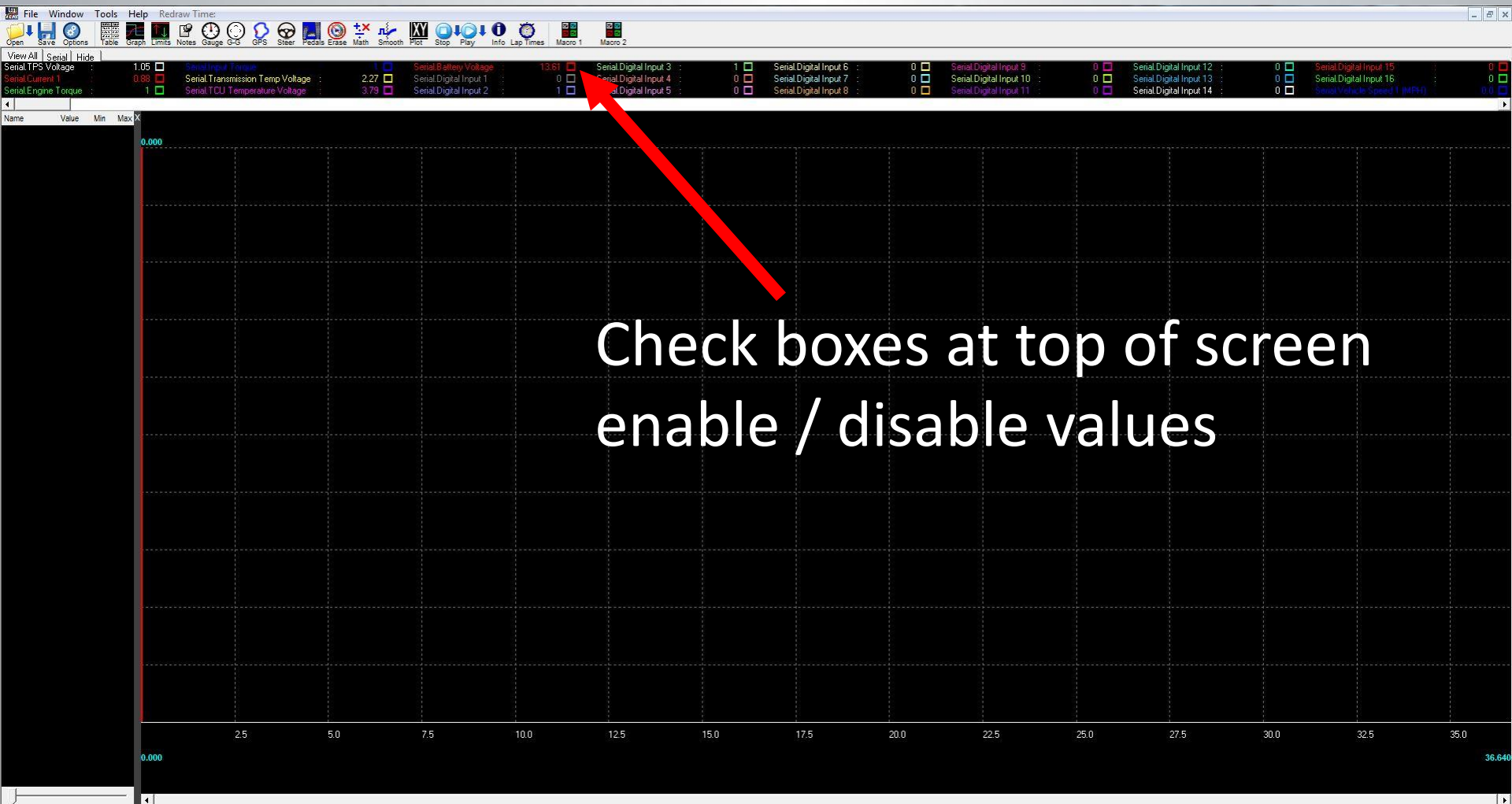


- Note the file location to find the file later for review and email.
- Default path is Documents folder.

What to Log / Save?

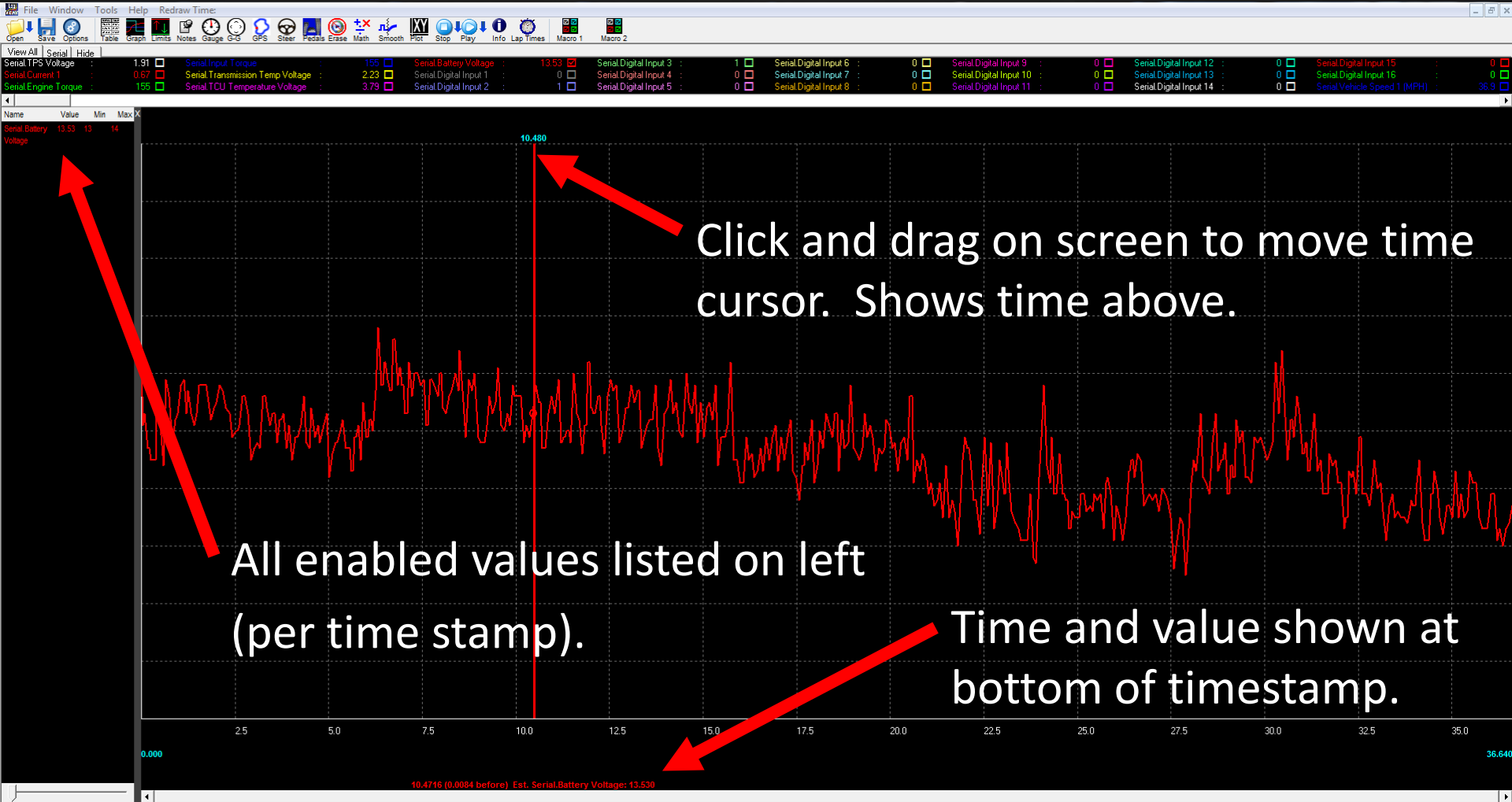
- Key the vehicle on.
- Start / Save Datalog.
- Start the engine.
- Either drive up through the gears and down to a stop, end datalog. Should be ~30-60 sec.
- Or drive the vehicle in the manner that an issue is occurring. End datalog after issue so the “time of issue” is known.

Enabling Values



Check boxes at top of screen
enable / disable values

Reading Values



Re-Scaling Values

Click on "Limits" to open rescale table.

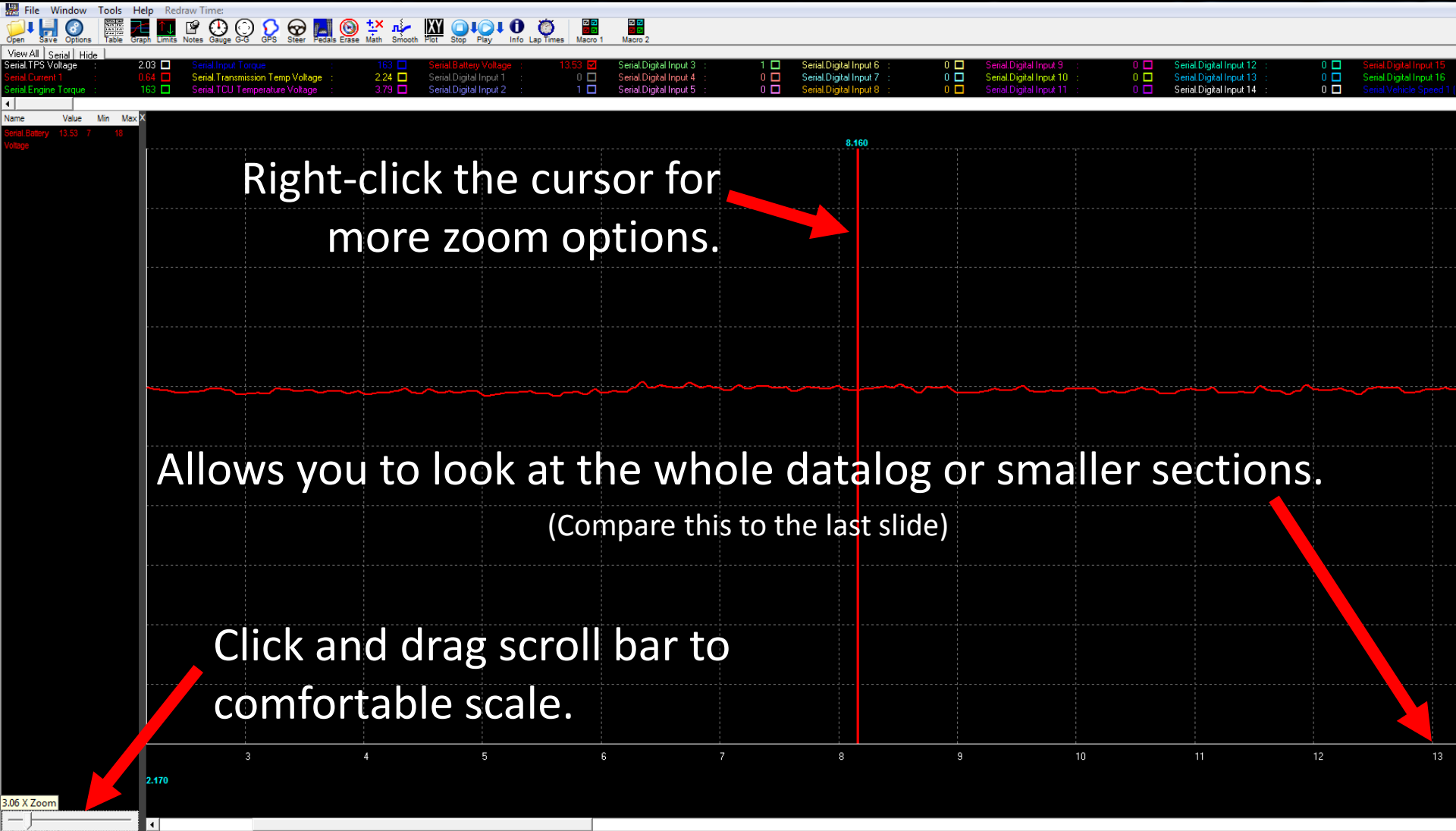
Type in your desired values, hit "Enter".

Hit "Save Changes".

Cleans up data, easier to read!
(Compare this to the last slide)

Column Name	Min. Value	Max. Value
Serial.TPS Voltage	0	5
Serial.Current 1	0.25	1.75
Serial.Engine Torque	0	169
Serial.Input Torque	0	250
Serial.Transmission Temp Voltage	2.11	2.27
Serial.TCU Temperature Voltage	3.77	3.79
Serial.Battery Voltage	7	18
Serial.Digital Input 1	-1	6
Serial.Digital Input 2	-1	6
Serial.Digital Input 3	-1	6
Serial.Digital Input 4	0	1
Serial.Digital Input 5	0	1
Serial.Digital Input 6	0	1
Serial.Digital Input 7	0	1
Serial.Digital Input 8	0	1
Serial.Digital Input 9	0	1
Serial.Digital Input 10	0	1
Serial.Digital Input 11	0	1
Serial.Digital Input 12	0	1
Serial.Digital Input 13	0	1
Serial.Digital Input 14	0	1
Serial.Digital Input 15	0	1
Serial.Digital Input 16	0	1
Serial.Vehicle Speed 1 (MPH)	0	100
Serial.Engine RPM	0	6000
Serial.Drive Shaft Speed	0	6000
Serial.Input Shaft Speed	0	6000

Re-Scaling Timeline



Right-click the cursor for more zoom options.

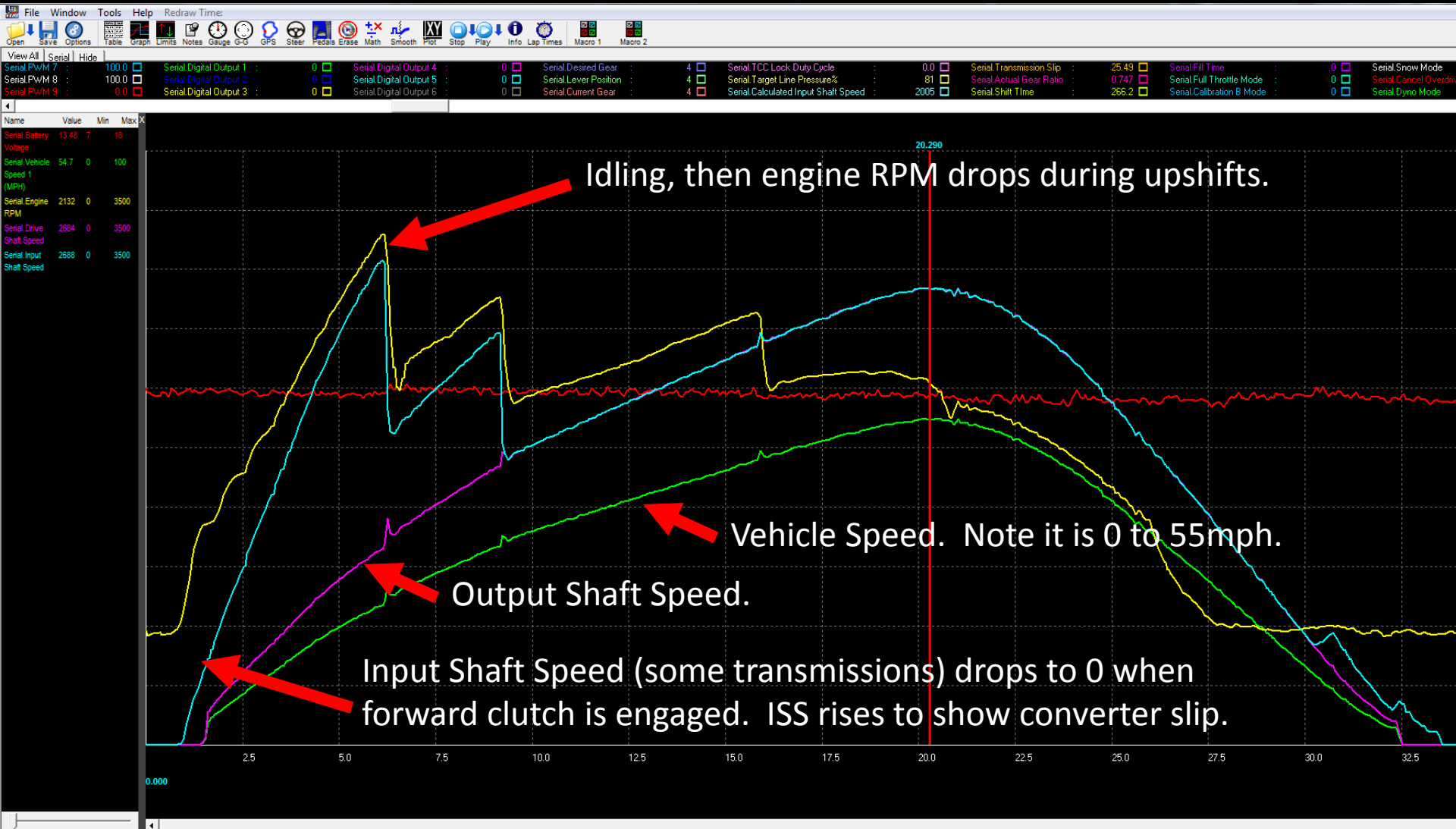
Allows you to look at the whole datalog or smaller sections.
(Compare this to the last slide)

Click and drag scroll bar to comfortable scale.

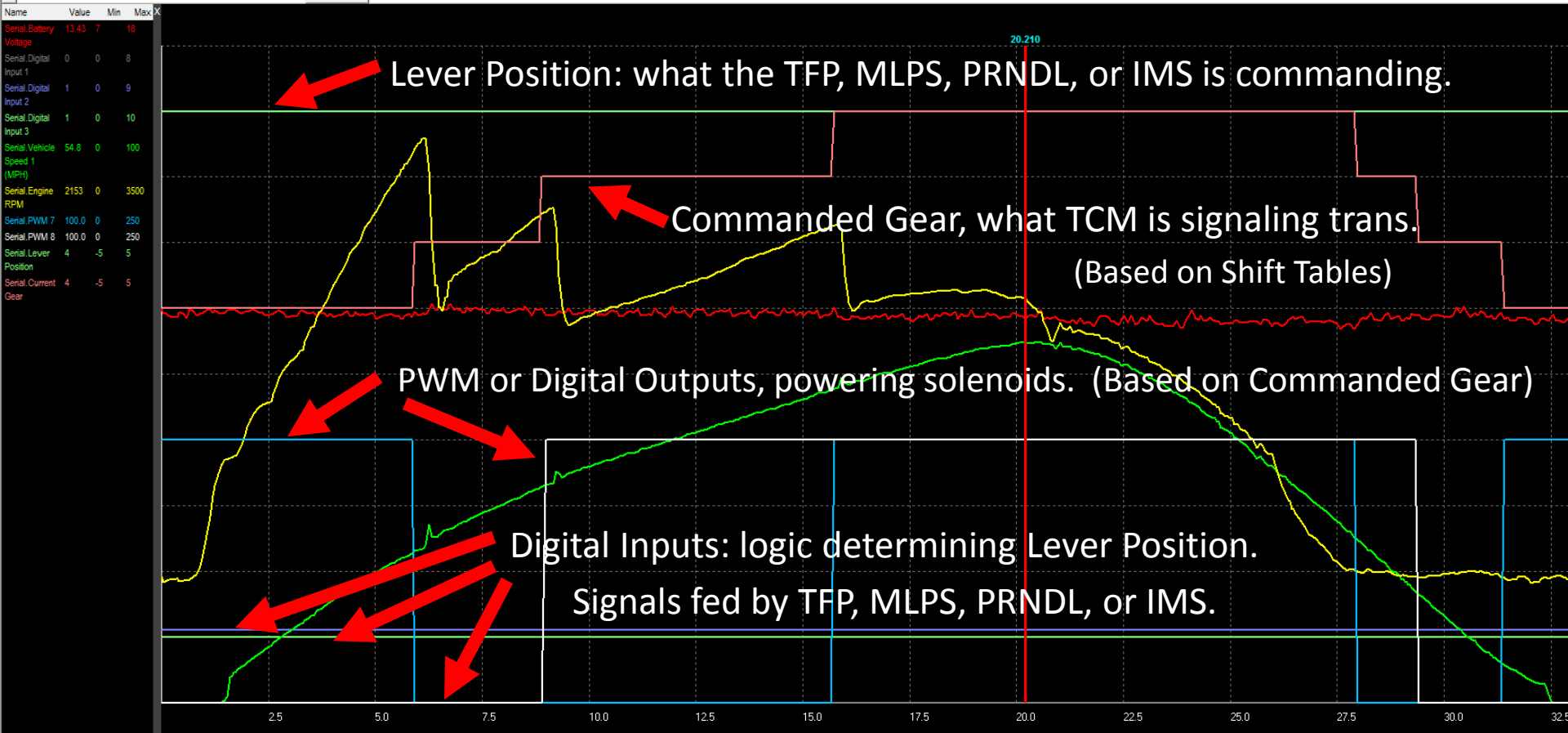
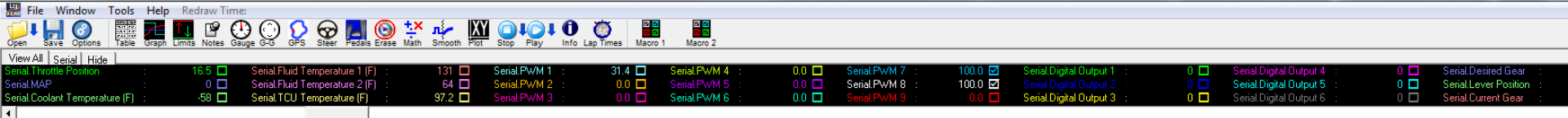
Types of Configurable I / O

- **Analog Inputs**
 - Is a 0-5v steady signal. For throttle position, trans temp, pressure sensors, etc...
- **Analog Outputs**
 - None on our system, would be 0-5v or 0-12v steady output. OEM Gauge Drivers use these.
- **Digital Inputs**
 - Toggle or Momentary, 12v or Ground sensing, invert-able.
 - For Lever Position, Brake Input, switches, etc...
- **Digital Outputs**
 - Up to 1A, providing 12v or Ground. For non-pwm-solenoids, lights, relay-control...
- **Speed Inputs**
 - Programmable Trigger values and 1k pull-up. Zero crossing or absolute, square or sin waves.
- **Speed Outputs**
 - Zero crossing output, configurable pulses-per-mile. For gauge or module outputs.
- **PWM (Pulse Width Modulation) Outputs**
 - Up to 1A, providing 12v or Ground. Frequency adjustable.
 - For pwm-solenoids, lights, relay control...
- **CANBUS**
 - Two twisted wire communication link(s). Internal resistor, set to ON or OFF. Two available on TCM's.
 - Communication Protocols are GMLAN or J1939 based on other modules.
- **Serial Bus**
 - Three wire communication link. Communicates with Laptop USB.

Vehicle Speed & RPM Values

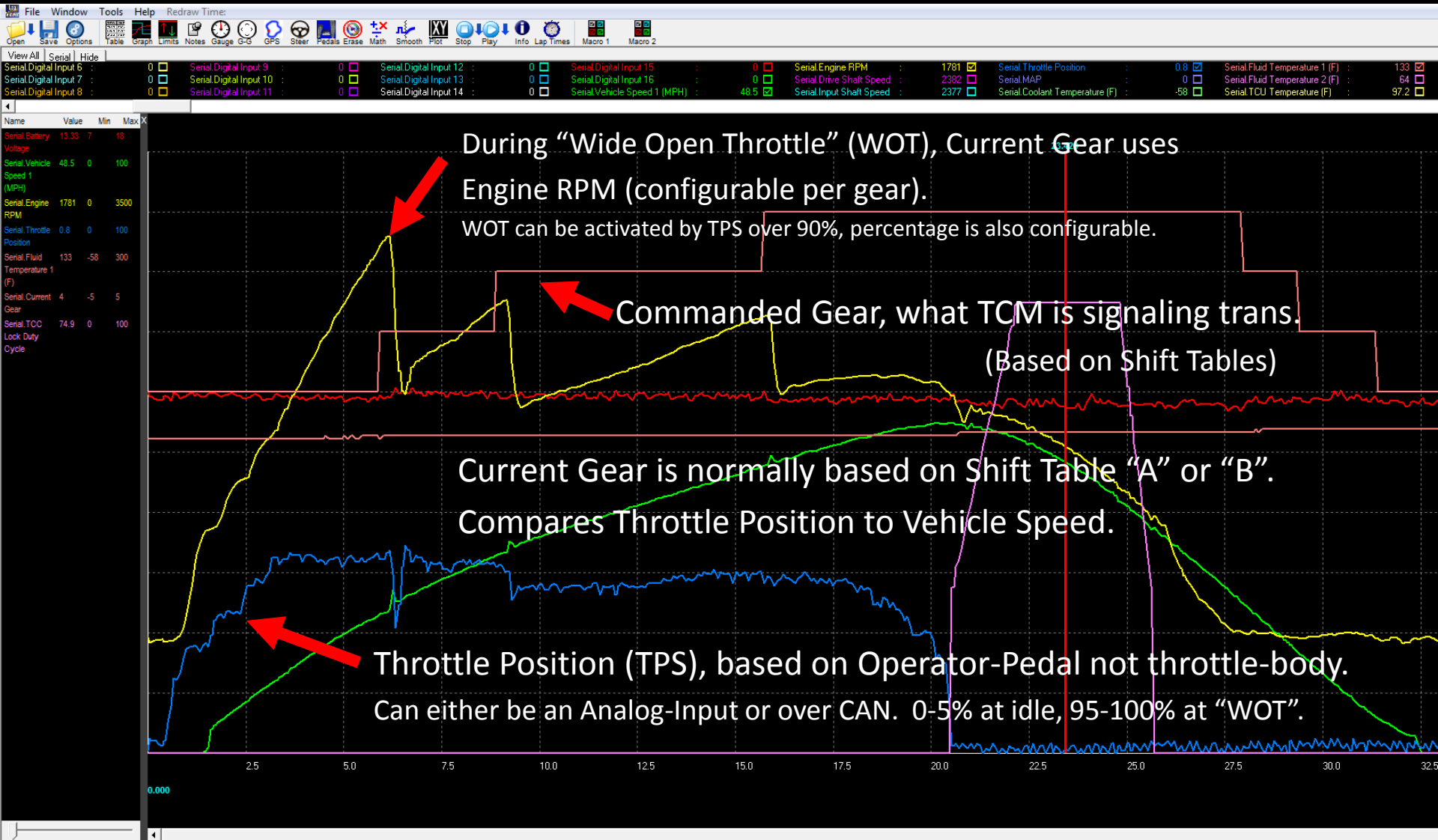


Range Values

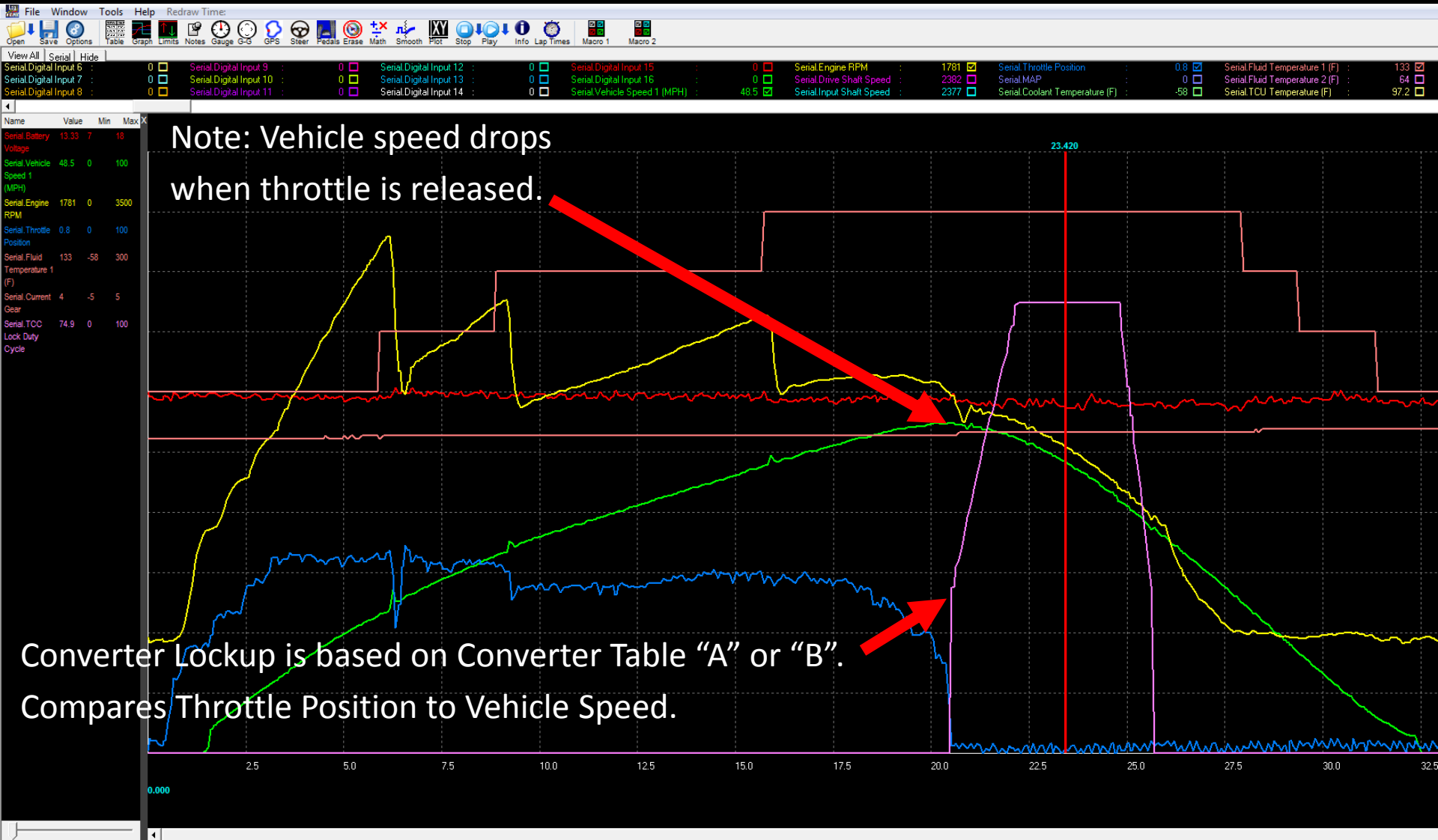


TFP=Transmission Fluid Pressure (switch). MLPS=Manual Lever Position Switch. PRNDL= Column or remote switch. IMS= Internal Mode Switch.

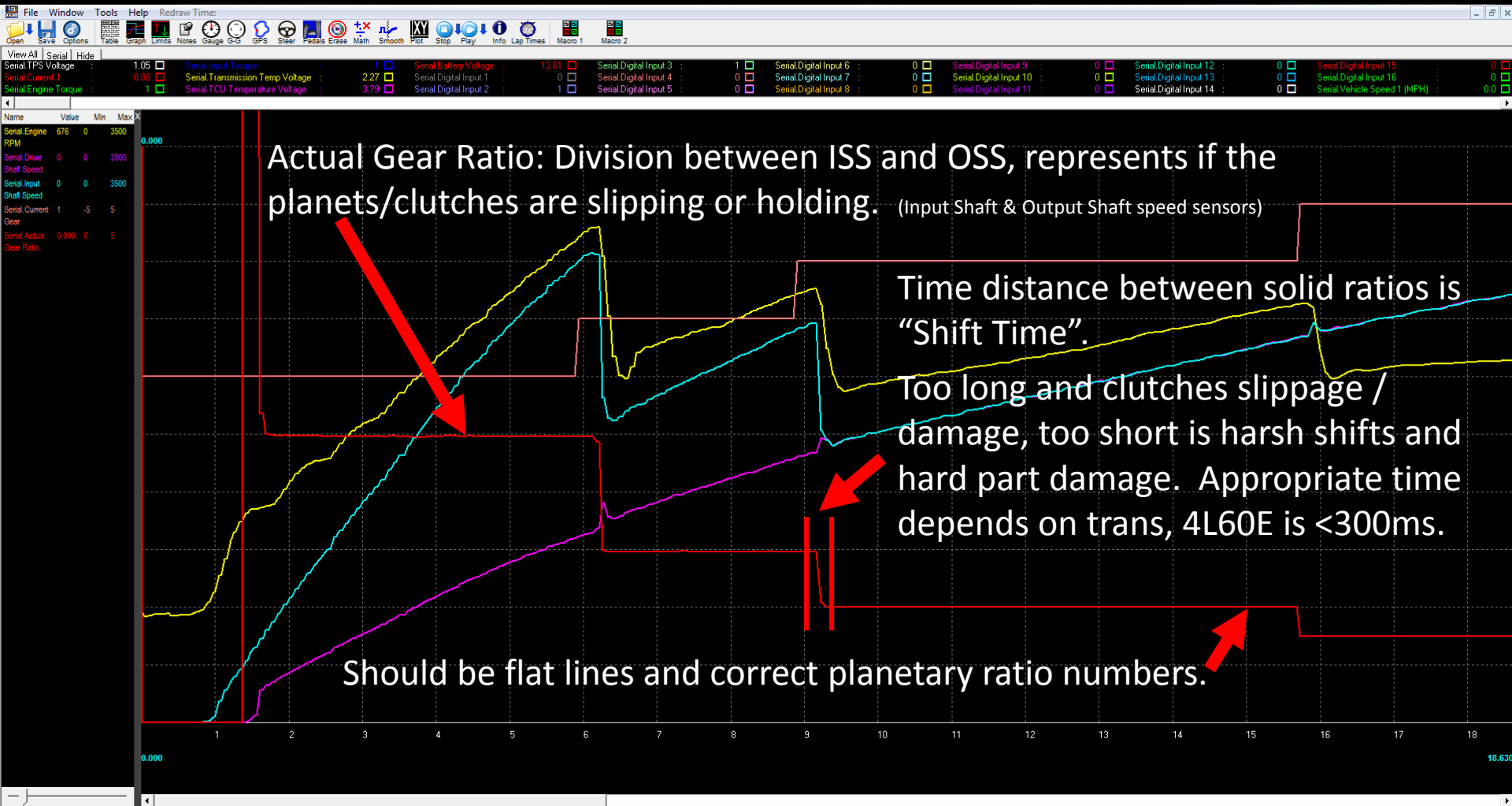
Shift & Converter Tables



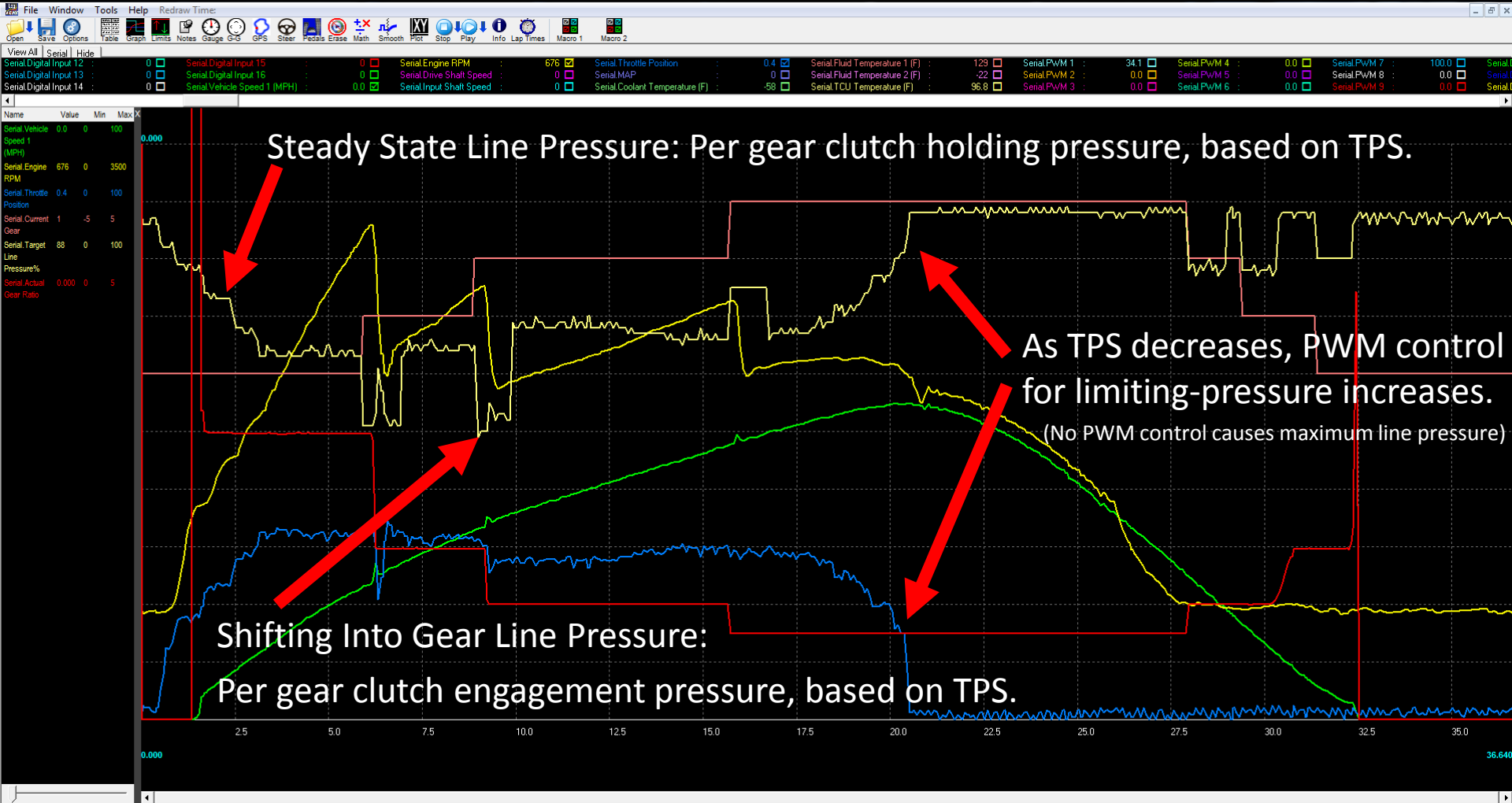
Shift & Converter Tables, Pt-2



Actual Gear Ratio



Line Pressure Control



Current & Stored Codes

