

| Monitor Name                           | What is It?   | What Can It Tell Me?  | All Other Vehicles (EJ Port Injected) |                              |                                      | 14-18 FXT, 15-18 WRX (FA20 Direct Injected) |                 |                                    |
|--|---|---|---------------------------------------|------------------------------|--------------------------------------|---|-----------------|------------------------------------|
|  |   |   | Normal Expected Behavior              |                              |                                      | Normal Expected Behavior                    |                 |                                    |
|  |   |   | Idle                                  | Light Throttle               | Heavy Throttle                       | Idle2                                       | Light Throttle3 | Heavy Throttle4                    |
| AF Correction 1 (Short Term Fuel Trim) | Correction based on current fueling error   | The values shown are a percentage correction applied to the injector pulse width. Positive values mean more fuel is being injected and negative values mean less is being injected. These corrections are called trims. Their purpose is to adjust fueling to help the engine run at the currently desired air/fuel ratio. When you floor it, or lift throttle and coast, you'll notice trimming stops (0% correction). During throttle transitions, expect to see trims move around. This is normal. Consistent corrections under similar operating conditions will be learned by the ECU, and applied as AF Learning (see below). Excessive trimming at idle or cruise may indicate an intake tract leak, bad sensor, or using the incorrect intake for specific mapping. | +/- 10%                               | +/- 20%                      | +/- 10%, 0% at full boost            | +/- 15%                                     | +/- 20%         | +/- 10%                            |
| AF Learning 1 (Long Term Fuel Trim)    | Learned Corrections based on AF Corrections needed in the past  | Just like AF Corrections, these are percentages added or subtracted to fueling. These values are learned slowly over time, and are often referred to as long term trims. AF Learning and AF Correction values are added together, then applied to fueling. Be mindful that you may experience long and short term trims which partially cancel each other out. For example, a short term trim of +12% and a long term trim of -15% may both seem large, but they're only causing a -3% total trim. Generally, over time both trims will get smaller as the ECU continues learning. Excessive long term trimming, like excessive short term trimming may indicate a mechanical issue like those mentioned above.   | +/- 10%                               | +/- 10%                      | +/- 10%, 0% at full boost            | +/- 15%                                     | +/- 15%         | +/- 10%                            |
| Boost                                  | This is a measure of intake manifold pressure/vacuum.   | This can help to diagnose failing turbos, boost creep, and help make sure boost levels are appropriate.   |                                       |                              | Varies with map.                     |   |                 | Varies with map.                   |
| Coolant Temp                           | Temperature of the engine coolant, taken at the engine block crossover pipe.  | A measurement of engine temperature. The car will typically alter timing and fueling at different engine temperatures. It can also let you know if the car is overheating or not actually warming up indicating issues in the cooling system or a faulty sensor.  | < 215 F                               | < 215 F                      | < 215 F                              | < 215 F                                     | < 215 F         | < 215 F                            |
| DAM                                    | A multiplier applied to dynamic ignition tables.  | Typically a good indicator of engine health. If the car is at proper DAM levels the car is typically running relatively well. Drops in DAM can be caused by lack of maintenance, incorrect parts for the map, poor fuel quality, or boost/vacuum leaks.   | 02-05 WRX: 16 06-14 WRX: 1.0          | 02-05 WRX: 16 06-14 WRX: 1.0 | 02-05 WRX: 16 06-14 WRX: 1.0         | 0.6 - 1.0                                   | 0.6 - 1.0       | 0.6 - 1.0                          |
| Feedback Knock                         | Current Knock Events  | This is a measure of the ECU's response to knock at the current time. This can be an indication of a few different things. The knock sensors will sometimes pick up noise caused by drivetrain movements under hard driving or if you're having issues with your clutch or engine and transmission mounts. Sometimes it will even pick up the air conditioning clutch engaging. Alternatively, the knock may be real, so your car may need better fuel, maintenance, it may have incorrect parts for the map being used, or you may have a loose bolt on your engine. As you can see in our chart, the higher compression direct injected engines are prone to larger and more frequent knock readings during normal operation.   | 0                                     | 0 to -2.8                    | 0 to -2.8                            | 0   | 0 to -4         | 0 to -4                            |
| Fine Knock                             | A response to perceived knock that persists each time the engine is operated under similar conditions. The ECU will gradually lessen these corrections until the car is back to operating normally or the car knocks again at which point it starts over. | Readings outside of the normal range indicate the same potential concerns as Feedback Knock.  | 0                                     | 0 to -2.8                    | 0 to -2.8                            | 0   | 0 to -4         | 0 to -4                            |
| Gear                                   | Current Transmission Gear   | Helps to double-check per-gear tuning items and helps to provide a context of how the car is being driven during a datalog.   |                                       |                              |                                      |   |                 |                                    |
| Intake Air Temp                        | Temperature of the air charge going into the intake   | As atmospheric conditions change, engine efficiency and operation are affected. The ECU attempts to correct for temperature changes in various ways. Knowing the temperature reading the ECU was given provides context for other readings such as boost.   |                                       |                              |                                      |   |                 |                                    |
| RPM                                    | Engine Revolutions Per Minute   | This is a measure of how fast your engine is spinning. Inconsistencies at idle can indicate faulty sensors or vacuum/boost leaks. When looking at a datalog or graph under acceleration, seeing erratic values can be an indication of misfiring due to spark plug, coil pack, or grounding issues, a fuel supply issue, or even a clutch or transmission slipping.   |                                       |                              |                                      |   |                 |                                    |
| TD Boost Error                         | Measurement of boost pressure measured vs. what is requested by the ECU.  | TD Boost Error shows where your car is under or overboosting. Keep in mind, you also won't always hit the requested boost pressure under every circumstance. For example, this value isn't very useful when you're not driving at full throttle. Also, some error is to be expected based on changes in driving and ambient conditions, variance in engine and turbo health etc.  |                                       |                              | +/- 1.5 after peak boost is achieved |   |                 | +/- 2 after peak boost is achieved |