V 1.2

AIO Suite

MAP COMPARISON

STANDARD vs PRIME

RSTuner AIO Suite Maps

Disclaimer

Supported map & trace list can differ slightly due to different software versions per ECU
More or fewer maps can be visible through the map editor screen within RSTuner software due to different software versions per ECU

Add'l for SIM32 S3000
Add'l for EMS3110

** indicates a trace overlay value*

Performance	AIO	AIO_PriME	Map Trace & Hit Trail	Map Guidance
Engine speed deactivation to prevent overspeed AC		Y		
Engine speed below which the AC is disengaged to gain performance		Y		
Torque driver demand effective (gross)	Y	Y		Y
Max boost pressure increase allowed		Y		
Water temperature to authorize performance injection end angle		Y		
Throttle fully opened indication threshold		Y		
Performance injection end angle for max torque		Y		
Injection end angle to minimize pollution		Y		
		195	Torque Engine Eff estimated	
		112	Torque Driver demand Eff	
		396	Full Load Active*	

Performance Full Load Phase	AIO	AIO_PriME	Map Trace & Hit Trail	Map Guidance
Full Load phase engine speed activation threshold	Y	Y		
Full load phase richness delay after start	Y	Y		
Open loop to full load phase delay	Y	Y		
Max boost pressure Indicated torque allowed	Y	Y		Y
Torque threshold inducing full load conditions		Y		
Gas pedal floored treshold		Y		
Trigger full throttle opening		Y		
Disable full throttle opening		Y		
Disable the postponed loop opening when throttle fully opened	Y	Y		
Map of Air Load inducing full load conditions	Y	Y		
Map of manifold pressure inducing full load conditions	Y	Y		
		195	Torque Engine Eff estimated	
		112	Torque Driver demand Eff	
		236	Engine estimated air load	
		396	Full Load Active*	

Performance Wastegate Contol	AIO	AIO_PriME	Map Trace & Hit Trail	Map Guidance
Boost Strategy choice		Y		
Wastegate OL PWM command depending on revs and throttle position		Y		
Wastegate OL PWM command depending on torque	Y	Y		
Minimum manifold pressure for CL waste-gate control		Y		
Max boost pressure increase (boost ramp)	Y	Y		
Transient detection (corresponds to an acceleration detection)		Y		
	242		Wastegate PWM Target	
	428		Wastegate Boost pressure error	
	426		Wastegate CL regulation active*	

Performance Overboost	AIO	AIO_PriME	Map Trace & Hit Trail	Map Guidance
Gear authorization for overboost				
Time limitation for the Overboost when full load is active				
Rate Limiter Overboost				
Overboost torque setting				
			Torque Engine Overboost gain	
			Overboost authorized*	

Performance Overspeed	AIO	AIO_PriME	Map Trace & Hit Trail	Map Guidance
Disable torque correction in over-speed zone		Y		
Rev Limit offset for over-speed zone		Y		
Maximum correction of engine torque in over-speed zone		Y		

Performance Limit and engine protection	AIO	AIO_PriME	Map Trace & Hit Trail	Map Guidance
Maximum manifold pressure for injection cut-off	Y	Y		
Maximum boost pressure to protect engine and supercharger	Y	Y		
Maximum air flow to protect engine and supercharger	Y	Y		
Max indicated Engine Torque increment (torque ramp)	Y	Y		
Inlet Air Temp torque reduction percentage		Y		
Atmospheric pressure torque reduction percentage		Y		
			Boost pressure measured	
			Manifold absolute pressure	

Engine Torque protection	AIO	AIO_PriME	Map Trace & Hit Trail	Map Guidance
Torque limitation gearbox and clutch	Y	Y		
Torque limitation water temperature	Y	Y		
Torque limitation oil temperature	Y	Y		
Disable torque correction outside the knock zone		Y		
Maximum torque correction for reducing knock		Y		
			Torque Limit protection engine	

Engine Thermal protection	AIO	AIO_PriME	Map Trace & Hit Trail	Map Guidance
Ignition correction for engine thermal level	Y	Y		
Full Load Fuel Enrichment for engine thermal level	Y	Y		
Calculating engine thermal level with oil temperature (1) or water temperature (0)		Y		
High Water temperature high engine temperature indication		Y		
Low Water temperature high engine temperature indication		Y		
High Oil high engine temperature indication		Y		
Low Oil high engine temperature indication		Y		
		413	Engine thermal level*	

Torque Diagnostic for safety mode	AIO	AIO_PriME	Map Trace & Hit Trail	Map Guidance
Engine speed threshold below which torque diagnosis is disabled	Y	Y		
Coolant temperature below which torque diagnosis is disabled	Y	Y		

Boost Pressure Diagnostic	AIO	AIO_PriME	Map Trace & Hit Trail	Map Guidance
Estimated manifold pressure from estimated engine torque		Y		
Min time req. for fault detection boost pressure		Y		
Rpm treshold to authorize boost pressure diagnostic	Y	Y		
			Manifold absolute pressure	

Catalyst Diagnostic	AIO	AIO_PriME	Map Trace & Hit Trail	Map Guidance
Minimum water temperature to check catalyst	Y	Y		

Ignition Timing	AIO	AIO_PriME	Map Trace	Map Guidance
Base Ignition Advance – VVT continuous				
Base Ignition Advance – without VVT or VVT ON/OFF minimum position	Y	Y		
Base Ignition Advance – VVT ON/OFF maximum position	Y	Y		
Water temperature Tip-In advance retard activation threshold		Y		
Full Load Ignition Advance addition		Y		
			Ignition Angle (applied)	
			Knock Correction slow (all cyl)	
			Closed Loop Active*	
			BMEP	

Knock Correction	AIO	AIO_PriME	Map Trace	Map Guidance
Maximum angle for fast correction		Y		
Maximum angle for slow correction with knock detection on 2 cyl or more		Y		
Maximum angle for slow correction with knock detection on only one cylinder		Y		
Fuel Enrichment coefficient when slow knock correction active		Y		
Knock Full Load Fuel Enrichment engine speed activation threshold		Y		

Knock Prevention	AIO	AIO_PriME	Map Trace	Map Guidance
preventive knock correction function of the air temperature		Y		
Full load Fuel Enrichment linked to the advance correction function of the air temperature		Y		
Minimum manifold pressure for advance correction		Y		
preventive knock correction factor function manifold pressure		Y		
			Ignition Correction Air temperature	

Knock Detection	AIO	AIO_PriME	Map Trace	Map Guidance
Knock critical zone for slow correction		Y		
			Manifold absolute pressure	

Fuel Primary Fueling	AIO	AIO_PriME	Map Trace	Map Guidance
Primary Fueling – No VVT	Y	Y		
Primary Fueling – VVT	Y	Y		
			AFR Estimated from O2 Front Sensor	
			AFR Wideband O2 Sensor	
			Closed Loop Active*	
if available			Fuel Trim ST Average	
if available			Fuel Trim ST Fast	
if available			Fuel Ratio desired	
			BMEP	

Fuel Full Load Phase	AIO	AIO_PriME	Map Trace	Map Guidance
Primary Minimal Open Loop Fueling	Y	Y		
Base Open Loop Fueling – Engine Air Load	Y	Y		
Base Open Loop Fueling – Manifold Pressure	Y	Y		
			AFR Estimated from O2 Front Sensor	
			AFR Wideband O2 Sensor	
			Full Load Active*	
if available			Fuel Trim ST Average	
if available			Fuel Trim ST Fast	
if available			Fuel Ratio desired	
			BMEP	

Fuel Injector	AIO	AIO_PriME	Map Trace	Map Guidance
Injector scale factor		Y		
Injector scale factor (function pressure difference over injector)		Y		
Injector opening delay for an optimal battery voltage		Y		
Injector opening time battery correction		Y		
Minimum injection time		Y		
			AFR Wideband O2 Sensor	
			Fuel Trim ST Average	
			Fuel Trim ST Fast	
			Closed Loop Active*	

Fuel Cranking	AIO	AIO_PriME	Map Trace	Map Guidance
Injection time at start-up		Y		

Fuel Consumption Display	AIO	AIO_PriME	Map Trace	Map Guidance
Total injection time corresponding to 40 mm3 of gasoline		Y		

Fuel Trim Control	AIO	AIO_PriME	Map Trace	Map Guidance
Long Term Fuel Trim water temperature activation threshold		Y		
Long Term Fuel Trim engine speed deactivation threshold		Y		
Fuel Trim ST Low pressure threshold of the first zone. [Area (0)]		Y		
Fuel Trim ST High pressure threshold of the fifth zone. [Area (4)]		Y		

Deceleration	AIO	AIO_PriME	Map Trace	Map Guidance
Fuel cut idle speed offset deactivation threshold		Y		
Fuel cut idle speed offset activation threshold		Y		
Water temperature to activate fuel cut on decel		Y		
Water temperature to activate fuel cut on decel if the first gear ratio is detected		Y		

Camshaft control VVT	AIO	AIO_PriME	Map Trace	Map Guidance
Enable Variable Camshaft		Y		
Water temperature camshaft activation threshold	Y	Y		
Intake Camshaft Angle	Y	Y		
Intake Camshaft rpm	Y	Y		

Idle Control	AIO	AIO_PriME	Map Trace	Map Guidance
Target Idle speed when in neutral	Y	Y		
Target Idle speed when in neutral AC on	Y	Y		
Target Idle speed when in Drive	Y	Y		
			Throttle position	

Closed Loop Control	AIO	AIO_PriME	Map Trace	Map Guidance
Closed Loop activation water temperature threshold		Y		
Closed Loop engine speed deactivation threshold		Y		
Closed Loop start-up delay		Y		
Water temperature over which CL to OL Transition delay is deactivated	Y	Y		
Open loop minimum Enrichment		Y		
			Closed Loop Active*	

2nd Closed Loop Control	AIO	AIO_PriME	Map Trace	Map Guidance
Enable software configuration 2nd Closed Loop		Y		
2nd Closed Loop engine speed activation threshold		Y		

Oxygen Sensor	AIO	AIO_PriME	Map Trace	Map Guidance
Configuration with or without oxygen sensor upstream		Y		
Configuration with or without oxygen sensor downstream		Y		

Catalyst Warmup	AIO	AIO_PriME	Map Trace	Map Guidance
Ignition retard A	Y	Y		
Ignition retard B	Y	Y		
Ignition retard C	Y	Y		
Ignition retard D	Y	Y		
			Engine Coolant temperature	
			Closed Loop Active*	
Water Temperature threshold wich determines cold start conditions for catalyst warm-up phase		Y		
TDC number required to end catalyst warm-up richness distribution		Y		
TDC number required to end catalyst warm-up after restart		Y		
Ignition retard strong for phase Depollution 20 C		Y		
Ignition retard if the first gear ratio is detected for phase Depollution 20 C		Y		
Ignition retard weak for phase Depollution 20 C		Y		
			Ignition correction Warm-up	
			Warm-up TDC counter	
			Warm-up phase	

Cooling fan control	AIO	AIO_PriME	Map Trace	Map Guidance
Water temperature cooling fan activation threshold engine running (set > thermos	Y	Y		

Rev Limiter	AIO	AIO_PriME	Map Trace	Map Guidance
Rev Limiter Warmup active below water temperature		Y		
Rev Limiter Warmup		Y		
Duration after starting when oil considered to be cold		Y		
Rev Limiter (speed < speed trip)	Y	Y		
Rev Limiter (speed > speed trip)	Y	Y		
Rev Limiter speed trip point		Y		
Rev Limit offset to reauthorize the injection		Y		
Rev Limiter Gear	Y	Y		
Rev Limiter Coolant	Y	Y		
Rev Limiter Oil	Y	Y		
Gear change indicator light	Y	Y		
			Rev Limiter during normal operation	

Diagnostic Trouble Codes MIL	AIO	AIO_PriME
DTC 0010 - "A" Camshaft Position Actuator Circuit /Open Bank 1	Y	Y
DTC 0105 - Manifold Absolute Pressure Circuit	Y	Y
DTC 0110 - Intake Air Temperature Sensor Bank 1	Y	Y
DTC 0115 - Engine Coolant Temperature Sensor 1 Circuit	Y	Y
DTC 0120 - Throttle Body Position Sensor "A" Circuit	Y	Y
DTC 0130 - O2 Sensor Circuit - Bank 1 Sensor 1	Y	Y
DTC 0135 - O2 Sensor Heater Circuit - Bank 1 Sensor 1	Y	Y
DTC 0136 - O2 Sensor Circuit - Bank 1 Sensor 2	Y	Y
DTC 0141 - O2 Sensor Heater Circuit - Bank 1 Sensor 2	Y	Y
DTC 0170 - Fuel Trim Bank 1	Y	Y
DTC 0201 - Injector Circuit/Open - Cylinder 1	Y	Y
DTC 0202 - Injector Circuit/Open - Cylinder 2	Y	Y
DTC 0203 - Injector Circuit/Open - Cylinder 3	Y	Y
DTC 0204 - Injector Circuit/Open – Cylinder4	Y	Y
DTC 0220 - Throttle/Pedal Position Sensor/Switch "B" Circuit	Y	Y
DTC 0225 - Throttle/Pedal Position Sensor/Switch "C" Circuit	Y	Y
DTC 0235 - Turbocharger/Supercharger Boost Sensor "A" Circuit	Y	Y
DTC 0243 - Turbocharger/Supercharger Wastegate Solenoid "A"	Y	Y
DTC 0300 - Random / multiple cylinder misfire detected (degraded mode)	Y	Y
DTC 0313 – Cylinder misfire detected (low fuel)	Y	Y
DTC 0315 - Crankshaft Position System Variation Not Learned (SMF)	Y	Y
DTC 0325 - Knock Sensor 1 Circuit	Y	Y
DTC 0335 - Crankshaft Position Sensor "A" Circuit	Y	Y
DTC 0340 - Camshaft Position Sensor "A" Circuit Bank 1	Y	Y
DTC 0351 - Ignition Coil 1-4	Y	Y
DTC 0352 - Ignition Coil 2-3	Y	Y
DTC 0418 - Secondary Air Injection System Control "A" Circuit	Y	Y
DTC 0420 - Catalyst System Efficiency Below Threshold (no catalyst present)	Y	Y
DTC 0443 - Evaporative Emission System Purge Control Valve Circuit	Y	Y
DTC 0460 - Fuel Level Sensor "A" Circuit	Y	Y
DTC 0480 - Fan 1 Control Circuit (low speed)	Y	Y
DTC 0481 - Fan 2 Control Circuit (high speed)	Y	Y
DTC 0500 - Vehicle Speed Sensor "A" (Mux signal)	Y	Y
DTC 0504 - Brake Switch "A"/"B" Correlation	Y	Y
DTC 0597 - Coolant thermostat below set temperature	Y	Y
DTC 0606 - Control Module Processor	Y	Y
DTC 0627 - Fuel Pump "A" Control Circuit/Open	Y	Y
DTC 0638 - Throttle Actuator Control Range/Performance Bank 1	Y	Y
DTC 0638 - Throttle Actuator Control Range/Performance Bank 1	Y	Y
DTC 0641 - Sensor Reference Voltage "A" Circuit/Open (nr1)	Y	Y
DTC 0645 - A/C Clutch Relay Control Circuit	Y	Y
DTC 0651 - Sensor Reference Voltage "B" Circuit/Open (nr2)	Y	Y
DTC 0685 - ECM/PCM Power Relay Control Circuit/Open	Y	Y
DTC 2075 - Intake Manifold Tuning (IMT) Valve Position Sensor/Switch CircuitBank	Y	Y
DTC 2101 - Throttle Actuator "A" Control Motor Circuit Range/Performance	Y	Y
DTC 2120 - Throttle/Pedal Position Sensor/Switch "D" Circuit	Y	Y

Diagnostic Trouble Codes Component Failure	AIO	AIO_PriME
DTC 0105 - Manifold Absolute Pressure Circuit		Y
DTC 0110 - Intake Air Temperature Sensor Bank 1		Y
DTC 0115 - Engine Coolant Temperature Sensor 1 Circuit		Y
DTC 0120 - Throttle Body Position Sensor "A" Circuit		Y
DTC 0130 - O2 Sensor Circuit - Bank 1 Sensor 1		Y
DTC 0135 - O2 Sensor Heater Circuit - Bank 1 Sensor 1		Y
DTC 0136 - O2 Sensor Circuit - Bank 1 Sensor 2		Y
DTC 0141 - O2 Sensor Heater Circuit - Bank 1 Sensor 2		Y
DTC 0170 - Fuel Trim Bank 1		Y
DTC 0201 - Injector Circuit/Open - Cylinder 1		Y
DTC 0202 - Injector Circuit/Open - Cylinder 2		Y
DTC 0203 - Injector Circuit/Open - Cylinder 3		Y
DTC 0204 - Injector Circuit/Open – Cylinder4		Y
DTC 0220 - Throttle/Pedal Position Sensor/Switch "B" Circuit		Y
DTC 0225 - Throttle/Pedal Position Sensor/Switch "C" Circuit		Y
DTC 0235 - Turbocharger/Supercharger Boost Sensor "A" Circuit		Y
DTC 0243 - Turbocharger/Supercharger Wastegate Solenoid "A"		Y
DTC 0300 - Random / multiple cylinder misfire detected (degraded mode)		Y
DTC 0301 - Cylinder 1 Misfire Detected		Y
DTC 0302 - Cylinder 2 Misfire Detected		Y
DTC 0303 - Cylinder 3 Misfire Detected		Y
DTC 0304 - Cylinder 4 Misfire Detected		Y
DTC 0300 - Random / multiple cylinder misfire detected (pollution)		Y
DTC 0301 - Cylinder 1 Misfire Detected		Y
DTC 0302 - Cylinder 2 Misfire Detected		Y
DTC 0303 - Cylinder 3 Misfire Detected		Y
DTC 0304 - Cylinder 4 Misfire Detected		Y
DTC 0313 – Cylinder misfire detected (low fuel)		Y
DTC 0313 – Cylinder misfire detected (pollution)		Y
DTC 0315 - Crankshaft Position System Variation Not Learned (SMF)		Y
DTC 0325 - Knock Sensor 1 Circuit		Y
DTC 0335 - Crankshaft Position Sensor "A" Circuit		Y
DTC 0351 - Ignition Coil 1-4		Y
DTC 0352 - Ignition Coil 2-3		Y
DTC 0420 - Catalyst System Efficiency Below Threshold (no catalyst present)		Y
DTC 0443 - Evaporative Emission System Purge Control Valve Circuit		Y
DTC 0500 - Vehicle Speed Sensor "A" (Mux signal)		Y
DTC 0504 - Brake Switch "A"/"B" Correlation		Y
DTC 0560 - Battery voltage		Y
DTC 0606 - Control Module Processor		Y
DTC 0627 - Fuel Pump "A" Control Circuit/Open		Y
DTC 0638 - Throttle Actuator Control Range/Performance Bank 1		Y
DTC 0641 - Sensor Reference Voltage "A" Circuit/Open (nr1)		Y
DTC 0645 - A/C Clutch Relay Control Circuit		Y
DTC 0651 - Sensor Reference Voltage "B" Circuit/Open (nr2)		Y
DTC 0685 - ECM/PCM Power Relay Control Circuit/Open		Y
DTC 1335 - Crankshaft Position Sensor "A" Circuit APV		Y
DTC 2101 - Throttle Actuator "A" Control Motor Circuit Range/Performance		Y
DTC 2120 - Throttle/Pedal Position Sensor/Switch "D" Circuit		Y
DTC 2263 - Turbocharger/Supercharger Boost System Performance		Y
DTC 2299 - Brake Pedal Position/Accelerator Pedal Position Incompatible		Y

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