










GEN3 vs GEN4 System Summary

Consideration	GEN3 PRO SEFI 	GEN4 PRO XTREME 	Notes 
Base System ECU	Micro/Speed: 16-bit processor @ 20 MHz	Micro / Speed: Dual Core 32-bit processor @ 260 MHz	
	Comms: RS232 Serial @ 9,600 bits/sec	Comms: Wireless Ethernet @ 1,000,000 bits/sec (1M bits/sec) & Dual CAN	(1) Bi-directional CAN for BS3 Touchscreen Dash, (1) CAN for Racepak HUD
	ECU Channel Qty: 60 I/O pins	ECU Channel Qty: 120 I/O pins	All GEN4 ECU I/O pins are included. Optional & Standard Feature Upgrades and Harness Kits are sold seperately.
	Data Acq: 52-ch's at 50 Hz for 5 minutes	Data Acq: 400-500 Ch's at 1kHz for 15 minutes. Data permanently saved to micro-sd card.	
Base System Inputs	<ul style="list-style-type: none"> - MAP (0-1 thru 0-5 Bar MAP) - TPS (GM) - Coolant Temp (GM) - Air Temp (GM) - WBO2 (Bosch LSU4.2) - Crank (IPU & HED) - Cam (IPU & HED) - Battery (+) & (-) - +12V Switch - Data Log Trigger - 2-Step - Timer Enable 	<ul style="list-style-type: none"> - MAP (0-1 thru 0-5 Bar MAP) - TPS (GM & Ford) - Coolant Temp (GM) - Air Temp (GM) - WBO2 (Bosch LSU4.9) - Crank (IPU & HED) - CAM (IPU & HED) - Battery (+) & (-) - +12V Switch - Data Log Trigger - 2 & 3-Step - Timer Enable 	
Base System Outputs	<ul style="list-style-type: none"> - Idle Air Control (GM) - (8) Injector Drivers - (8) Smart & (8) Dumb COP Ignition Drivers - HEI / TFI Ignition drivers - Single Fan Enable - Primary & Secondary Fuel Pump Enable - Tach Output - (1) Points Output 	<ul style="list-style-type: none"> - Idle Air Control (GM & Ford) - (8) Injector Drivers - (8) Smart COP Ignition Drivers - HEI / TFI Ignition drivers - Dual Fan Enable - Primary & Secondary Fuel Pump Enable - Tach Output - (3) Points Output - Secondary Big Drive Enable 	GEN4 requires 3rd party (8) Dumb COP Ignition Driver Module
Communication interfaces	<ul style="list-style-type: none"> - RS232 - TxD - RxD - RS232 RTN 	<ul style="list-style-type: none"> - (2) CAN Channels - RJ45 Ethernet Port - Micro SD Card 	CAN 1: BS3 Touch Screen Dash CAN 2: Racepak HUD Connects Wireless Ethernet Router to GEN4 ECU Optional Feature Upgrade interface & 4 GB external data logging RAM storage
Other Base System Considerations		<ul style="list-style-type: none"> - 3-Axis Accelerometer & Gyro - On board Baro - Includes Wireless Ethernet Router for in-vehicle calibration - GEN4 ECU is compatible with all GEN3 Base system wire harnesses 	- V12 Fuel & Spark

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Calibration & Data Acquisition Software	- BIG COMM PRO with 5' RS232 Serial comms cable	- BIG COMM PRO Plus with 5' Cat 6a Ethernet cable for Wirelsss Ethernet comms	1st ever Wireless Ethernet topology in Aftermarket EFI!
	- Single 16 x 16 Fuel, Spark & Lambda Maps	- Multiple 24 x 24 Fuel, Spark & Lambda Maps	
		- Configurable Tuner & Data Recorder "Tabs"	Individual Fuel & Spark Maps based on Speed & Load for 5-Gears
GEN3 & GEN4 Optional Feature Upgrades			
E85	- GM Flex Fuel Sensor	- GM Flex Fuel Sensor	
SR2.3 Traction Control	- Drive Shaft (HED)	- Drive Shaft (HED)	GEN3: 16 pts, SR2 or ETM, 1 Curve GEN4: 32 pts, SR2 & ETM, 3 Curves, 1 RPM resolution for drive shaft & 10 msec for time, all-scalable
	- 3-Step Enable	- 3-Step Enable	
	- Data Log Trigger	- Data Log Trigger	
DAE	- Drive Shaft (HED)	- Drive Shaft Signal (HED)	- 4L60E / 4L80E Trans & DAE upgrades can be combined with GEN4. Not possible with GEN3. - Fuel Pressure Safety Shutoff
	- Input Shaft (HED)	- Input Shaft (HED)	
	- Fuel Pressure	- Fuel Pressure	
	- 3-Step Enable	- 3-Step Enable	
	- Data Log Trigger	- Data Log Trigger	
	- Turbo Back Pressure	- Turbo Back Pressure	
	- Oil Pressure	- Oil Pressure	
	- Oil Pan Vacuum	- Oil Pan Vacuum	
		- PWM Solenoid	
	- NOS Bottle Pressure		
	- Transmission Temp		
DAE2	- Boost (WG Pressure)	- Boost (WG Pressure)	3-Axis Accelerometr & Gyro internal to GEN4 ECU
	- Trans Line Pressure	- Trans Line Pressure	
	- Single Axis Accelerometer	- A/C Clutch Override	
		- A/C Bump	
		- Right Front Shock	
		- Left Front Shock	
		- Right Rear Shock	
		- Left Rear Shock	
		- Shift Light	
	- TurboShaft Speed_1		
	- TurboShaft Speed_2		
NOS	- Timer Enable (NOS)	- Timer Enable (NOS)	
	- (4) NOS Stages	- (6) NOS Stages	
	- (4) Digiset int. / ext. timers	- (6) Digiset int. / ext. timers	
		- NOS PWM Solenoid	
	- NOS Bottle Pressure		
4L60E / 4L80E Transmission	- Shift Solenoid A & B	- Shift Solenoid A & B	
	- Trans Mode A, B & C	- Trans Mode A, B & C	
	- TCC PWM	- TCC PWM	
	- Force Motor High & Low	- Force Motor High & Low	
	- TOSS (+)	- TOSS (+)	
	- TISS (+)	- TISS (+)	
	- Trans Temp	- Trans Temp	

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BOOST (CO2)	<ul style="list-style-type: none"> - Boost Enable - Boost Increment - Boost Decrement - Boost (WG Pressure) 	<ul style="list-style-type: none"> - Boost Enable - Boost Increment - Boost Decrement - Boost (WG Pressure) 	GEN3: 16 pts, 1 Curve GEN4: 32 pts, 3 Curves, all-scalable Boost (GN) Increment only
DAE3	N/A	<ul style="list-style-type: none"> - (4) Spare A/D - Spare Injector Driver - Wheelie Control - (7) Configurable GPIO 	- GPIO is capable of (4) PWMs, (12) Maps & "Smart" data acq triggers.
<u>GEN3 & GEN4 Standard Feature Upgrades</u>			
Secondary Bosch WBO2	<ul style="list-style-type: none"> - Bosch LSU4.2 WBO2 - LUEGOIP, LUEGOIA, LUEGOH- - LUEGOUN, LUEGOVM 	<ul style="list-style-type: none"> - Bosch LSU4.9 WBO2 - LUEGOIP, LUEGOIA, LUEGOH- - LUEGOUN, LUEGOVM 	Bosch LSU4.9 sensor has faster light off, is more fuel tolerant & incorporates pressure compensation
Primary NTK WBO2 for Methanol	<ul style="list-style-type: none"> - NTK WBO2 - RUEGOIP+ - RUEGOVS- - RUEGOH- - RUEGOVS+ 	<ul style="list-style-type: none"> - NTK WBO2 - RUEGOIP+ - RUEGOVS- - RUEGOH- - RUEGOVS+ 	
Secondary NTK WBO2 for Methanol	N/A	<ul style="list-style-type: none"> - NTK WBO2 - LUEGOIP+ - RUEGOVS- - RUEGOH- - RUEGOVS+ 	
16 INJECTOR	- (8) Secondary Injector Drivers	- Secondary Big Drive Enable	<ul style="list-style-type: none"> - GEN4 16 Injector system requires (2) Big Drive Injector modules. - GEN4 16 Injector upgrade is enabled via GEN4 ECU primary 60-way header
HUD Dash	<ul style="list-style-type: none"> - RacePak - VNET - RacePak - UDX 	<ul style="list-style-type: none"> - RacePak - VNET - RacePak - UDX - BS3 Touch Screen Dash 	
Drive-by-Wire / Knock	N/A	<ul style="list-style-type: none"> - Pedal 1 & 2 - Knock RB (+)/(-) - Knock LB (+)/(-) 	
BIG BAND WBO2 & T/C Module (Primary)	N/A	<ul style="list-style-type: none"> - 4-Ch Bosch LSU4.9 WBO2 - 4-Ch T/C (Type-K) - Exhaust Back Pressure - MAP - 4-Ch WBO2 DAQ Out - +12V Switch & Data Trigger - Data Trigger - RJ45 Ethernet Port 	<ul style="list-style-type: none"> - 1st ever real-time closed-loop WBO2 feedback on a per cylinder basis enabled by GEN4 Ethernet topology! - EGT Safety Shut Off
BIG BAND WBO2 & T/C Module (Secondary)	N/A	<ul style="list-style-type: none"> - 4-Ch Bosch LSU4.9 WBO2 - 4-Ch T/C (Type-K) - Exhaust Back Pressure - MAP - 4-Ch WBO2 DAQ Out - +12V Switch & Data Trigger - Data Trigger - RJ45 Ethernet Port 	EGT Safety Shut Off