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Doc design by: Dan Bryant Version 1.5
Thread: http://priuschat.com/forums/gen-iii-2010-prius-technical-discussion/64406-scangaugeii-work-2010-a-9.html

Please note you can not display any two XGAUGE with the same TXD at the same time (marked in light blue) unless you have Firmware 4.05 or higher

Plug In Prius has HV ECU at 7E3 (Same as Gen II)	Car settings	Standard OBDII, should work on all cars	Purple needs FW 4.05 or higher for multi-frame support
Passive XGAUGES	Need to fix	Another XGAUGE has same TXD - only can use one at a time unless on FW 4.04+	

To convert green temperature readings to C, replace MTH with 00010001FFD8

Toyota Prius Gen III CAN XGAUGE list

GAUGE	TXD	RXF	RXD	MTH	NAM	Status	Notes
Kilometers per Hour	00BC	010042B40000	380C	03E804000000	kph		xx.xx kph
Miles per Hour	00BC	010042B40000	380C	252603DA0000	mph		xx.xx mph
Accelerator Position	024D	010202450000	2008	000100020000	thr		1-100%
Steering Angle	002D	010082250000	140C	001000010000	sta		Scangauge bug, number lower than -99.9 bad
Individual Wheel Speed	00B2	010002AA0000	1010		RFs	Incomp.	Unsure of which wheel is which, need MTH
Individual Wheel Speed	00B2	010002AA0000	2010		LFs	Incomp.	Unsure of which wheel is which, need MTH
Individual Wheel Speed	00B2	010002AA0000	3010		RRs	Incomp.	Unsure of which wheel is which, need MTH
Individual Wheel Speed	00B2	010002AA0000	4010		LRs	Incomp.	Unsure of which wheel is which, need MTH
ICE RPM	01CC	010102C40000	1010	006400800000	Rpm		xxxx RPM, ~40fps
Hybrid Unknown 1	07E2	044105050000	2808	000100010000	UK1	Unknown	0-120? Updates more often when ICE on
Hybrid Unknown 2	07E2	0441050F0000	2808	000100010000	UK2	Unknown	0-120? Fluctuates between 70-80 while driving
Hybrid Unknown 3	07E2	044105100000	2810	00010001FFEE	UK3	Unknown	Relates to ICE.. 0-1500. Slow to update
A/C Power Usage	07E2217D	0461057D0000	3808	003200010000	ACw		xxx watts
Battery Air Intake Temp F	07E22187	056106870000	3008	00090005FFC6	BtT		x F
Battery Air Intake Temp C	07E22187	056106870000	3008	00010001FFCE	BtT		x C
Battery Amps	07E2218A	0461858A0000	2810	0001000AF334	amp		x.xx Amps (+ for draw) [Does not work on PHV]
Battery Charge Max	07E22198	056186980000	4808	000A0002FBC7	bcw		-xx.x kw
Battery Cooling Fan Mode	07E2219B	0461059B0000	3008	000100010000	BFM		x (0-6 -- with 6 being 100%) [Test by setting fan speed below]
Battery Discharge Max	07E22198	056186980000	4008	000A0002FF37	bdw		xx.x kw
Battery Resistance Block 1	07E22195	02EA05610695	3008	000100010000	R01		xx mOhm (divide by 100 to get ohms)
Battery Resistance Block 2	07E22195	02EA05610695	3808	000100010000	R02		xx mOhm (divide by 100 to get ohms)
Battery Resistance Block 3	07E22195	02EA05610695	4008	000100010000	R03		xx mOhm (divide by 100 to get ohms)
Battery Resistance Block 4	07E22195	02EA05610695	4808	000100010000	R04		xx mOhm (divide by 100 to get ohms)
Battery Resistance Block 5	07E22195	010702EA0321	1808	000100010000	R05		xx mOhm (divide by 100 to get ohms)
Battery Resistance Block 6	07E22195	010702EA0321	2008	000100010000	R06		xx mOhm (divide by 100 to get ohms)
Battery Resistance Block 7	07E22195	010702EA0321	2808	000100010000	R07		xx mOhm (divide by 100 to get ohms)
Battery Resistance Block 8	07E22195	010702EA0321	3008	000100010000	R08		xx mOhm (divide by 100 to get ohms)
Battery Resistance Block 9	07E22195	010702EA0321	3808	000100010000	R09		xx mOhm (divide by 100 to get ohms)
Battery Resistance Block 10	07E22195	010702EA0321	4008	000100010000	R10		xx mOhm (divide by 100 to get ohms)
Battery Resistance Block 11	07E22195	010702EA0321	4808	000100010000	R11		xx mOhm (divide by 100 to get ohms)
Battery Resistance Block 12	07E22195	010702EA0322	1808	000100010000	R12		xx mOhm (divide by 100 to get ohms)
Battery Resistance Block 13	07E22195	010702EA0322	2008	000100010000	R13		xx mOhm (divide by 100 to get ohms)
Battery Resistance Block 14	07E22195	010702EA0322	2808	000100010000	R14		xx mOhm (divide by 100 to get ohms)
Battery Temp 1 C	07E22187	02EA05610687	4010	00010100FFCE	BT1		xx C Cell Temp Sensor 1
Battery Temp 1 F	07E22187	02EA05610687	4010	00090500FFC6	BT1		xx F Cell Temp Sensor 1
Battery Temp 2 C	07E22187	010702EA0321	1810	00010100FFCE	BT2		xx C Cell Temp Sensor 2
Battery Temp 2 F	07E22187	010702EA0321	1810	00090500FFC6	BT2		xx F Cell Temp Sensor 2

Battery Temp 3 C	07E22187	010702EA0321	2810	00010100FFCE	BT3		xx C Cell Temp Sensor 3
Battery Temp 3 F	07E22187	010702EA0321	2810	00090500FFC6	BT3		xx F Cell Temp Sensor 3
Battery Temp 4 C	07E22187	02EA05610687	3010	00010100FFCE	BT4		xx C Cell Temp Sensor 4
Battery Temp 4 F	07E22187	02EA05610687	3010	00090500FFC6	BT4		xx F Cell Temp Sensor 4
Battery Voltage (Pack)	07E22174	010702EA0321	2010	000100020000	BV+		xxx V Battery Voltage
Battery Voltage Block 1	07E22181	02EA05610681	3010	000100080000	V01		xxxx mV (Milivolts so divide by 100 to get volts)
Battery Voltage Block 2	07E22181	02EA05610681	4010	000100080000	V02		xxxx mV (Milivolts so divide by 100 to get volts)
Battery Voltage Block 3	07E22181	010702EA0321	1810	000100080000	V03		xxxx mV (Milivolts so divide by 100 to get volts)
Battery Voltage Block 4	07E22181	010702EA0321	2810	000100080000	V04		xxxx mV (Milivolts so divide by 100 to get volts)
Battery Voltage Block 5	07E22181	010702EA0321	3810	000100080000	V05		xxxx mV (Milivolts so divide by 100 to get volts)
Battery Voltage Block 6 HB	07E22181	010702EA0321	4808	000100080000	V06	Special	xxxx mV (Milivolts so divide by 100 to get volts) [add to 6 LB]
Battery Voltage Block 6 LB	07E22181	010702EA0322	1808	000100080000	V6B	Special	**See above because value crossed the frame boundry**
Battery Voltage Block 7	07E22181	010702EA0322	2010	000100080000	V07		xxxx mV (Milivolts so divide by 100 to get volts)
Battery Voltage Block 8	07E22181	010702EA0322	3010	000100080000	V08		xxxx mV (Milivolts so divide by 100 to get volts)
Battery Voltage Block 9	07E22181	010702EA0322	4010	000100080000	V09		xxxx mV (Milivolts so divide by 100 to get volts)
Battery Voltage Block 10	07E22181	010702EA0323	1810	000100080000	V10		xxxx mV (Milivolts so divide by 100 to get volts)
Battery Voltage Block 11	07E22181	010702EA0323	2810	000100080000	V11		xxxx mV (Milivolts so divide by 100 to get volts)
Battery Voltage Block 12	07E22181	010702EA0323	3810	000100080000	V12		xxxx mV (Milivolts so divide by 100 to get volts)
Battery Voltage Block 13 HB	07E22181	010702EA0323	4808	000100080000	V13	Special	xxxx mV (Milivolts so divide by 100 to get volts) [add to 13 LB]
Battery Voltage Block 13 LB	07E22181	010702EA0324	1808	000100080000	13B	Special	**See above because value crossed the frame boundry**
Battery Voltage Block 14	07E22181	010702EA0324	2010	000100080000	V14		xxxx mV (Milivolts so divide by 100 to get volts)
Brake Pedal Force	07B02141	046145410000	3808	00090001FFA6	BFC		x.xx MPA (not exact, but close)
Calculated Load	07E02101	056106010000	3008	006400FF0000	cLD		Same as stock 'LOD' gauge
Coolant Temp (Alt)	07E02101	010702E80321	3808	00090005FFD8	ETF		xxx F Probably exhaust coolant temp (Req firm 4.05 on SGII)
DC/DC Lower Converter Temp	07E22174	056106740000	3808	00090005FFD8	DLC		x F
DC/DC Upper Converter Temp	07E22174	056106740000	3008	00090005FFD8	DUC		x F
Distance Since Oil Change	07C02141	046105410000	2808	006400010000	OIL		xxxx Miles since last oil change (reset)
Friction Brake Sensor	07B02107	046145070000	2808	00020001FFCE	FRI		0.00-4.50 (Shows actual friction braking amount)
Fuel Cut On or Off	Use the built in OPEN LP or CLSD LP on the SGII. This is 100% accurate if fuel is being injected						
Fuel Flow microL	07E0213C	0461053C0000	2810	000100200000	uL		xxx microL (unsure about scaling)
Fuel Injector microS	07E0213C	0461053C0000	3810	000100010000	uS		xxxx micro seconds (unsure about scaling)
Fuel Level (Liters)	07C02129	046185290000	2808	138800010000	Flv	Untested	x.x liters
Fuel Level (US Gallons)	07C02129	046185290000	2808	13880EC90000	Flv		x.x US Gallons, updates quickly
Inverter Coolant Temp	07E22175	046105750000	4008	00090005FFD8	ICF		x F
Inverter MG1 Temp	07E22170	046105700000	2808	00090005FFD8	I1C		x F
Inverter MG2 Temp	07E22171	046105710000	2808	00090005FFD8	I2C		x F
MG1 Carrier Frequency	07E2217C	0461857C0000	2808	000A00140000	M1k		x.x khz
MG1 RPM	07E22161	046105610000	4010	000100018000	M1R		xxxx RPM
MG1 Temp	07E22161	046105610000	3808	00090005FFD8	M1C		x F
MG1 Torque	07E22167	046185670000	2810	000100018000	M1T		xx.x ft-lbs (read high by 8%)
MG2 Carrier Frequency	07E2217C	0461857C0000	3008	000A00140000	M2k		x.x khz
MG2 RPM	07E22162	046105620000	4010	000100018000	M2R		xxxx RPM
MG2 Temp	07E22162	046105620000	3808	00090005FFD8	M2C		x F
MG2 Torque	07E22168	046185680000	2810	000100018000	M2T		xx.x ft-lbs (reads high by 8%)
Outside Temp	07E22101	056106010000	4808	00090005FFD8	ExF		x F (Ambient Temp)
Regen Cooperation	07B02158	046125580000	2808	000100010000	RGC		On or Off
Regen Operating Force	07B02148	046105480000	4008	001000010000	RGO		~0-720 NM (Shows actual regen braking force)
Regen Requested Force	07B02148	046105480000	3008	001000010000	RGR		~0-720 NM

Room Temp	07C42121	046185210000	2808	005A001400CB	RmF		xx.x F - Temperature inside cabin
State of Charge	07E2015B	0441855B0000	2808	03E800FF0000	SoC		xx % Found by "Lobato (motoleon)" See changelog
Vehicle Load	07E02101	056106010000	4008	006400FF0000	vLD		Not sure exactly what this is 0-100%
Voltage After Boost (Battery)	07E22174	010702EA0321	3010	000100020000	BVB		xxx V Voltage after Boost
Disable Traction Control	07E230610040	047025610000	2008	000100010000	DTC		Car in IGN-ON, NOT READY. Reset: Turn car off and on again.
Seat Belt Beep Query	07C021A7	046115A70000	2808	000100010000	SBQ		C0 for stock, 00 for disable
Seat Belt Beep Disable	07C03BA700	047B15A70000	2008	000100010000	SBS		Should return A7. Replace '00' with 'C0' to go back to stock.
Set Battery Cooling Fan Speed	07E23081060x	047025810000	2008	000100010000	SFS		Replace 'x' with 0 through 6 (6 is max) [Shows ON when set]
Reverse Beep Query	07C021AC	046115AC0000	2808	000100010000	RBQ		40 for disabled, 00 for enable beeping
Reverse Beep Disable	07C03BAC40	047B15AC0000	2008	000100010000	RBS		Should return AC. Replace '40' with '00' to go back to stock.
Barometric Pressure	07E02101	010702E80321	3008	000100010000	AP	Not work.	xxx kPa Prob. same as gen OBD-II (Req firm 4.05 on SGII)
Cruise Set Speed	07E22121	046105210000	2008	3D09623A0000	CSt	Incomp.	MPH (does not seem to work)
System Off Time	07E02137	010702E80323	1808	000100060000	SOt	Not work.	Hours since last READY (0h-42h)
Total Trip Time	50	'800000000000	'0000	'000000000000	crt	Generic	hours x.x
Horse Power (engine)	00	400080000000	0000	000A00170000	HP	Generic	Horsepower
KiloWatt Power (engine)	00	400080000000	0000	000A001F0000	kW	Generic	KiloWatt Power
Current avg. trip MPG	00	800000000000	0000	000000000000	cfe	Generic	current FE (same on AVG xgauge)
Daily avg. MPG	01	800000000000	0000	000000000000	dfe	Generic	daily FE
ODBII Error Count	07E00101	044185010000	2907	000100010000	Oec	Generic	
Manifold Air Flow	07E00110	044145100000	2810	000100010000	Maf	Generic	0 - 655.35 g / s
MIL trip distance	07E00121	044105210000	2810	000100010000	Mkm	Generic	0-65535 Km
12V battery (control unit)	07E00142	044145420000	2810	0001000A0000	Cmv	Generic	0-65,5 V
Absolute Load Value	07E00143	044105430000	2810	000100010000	Alv	Generic	?
Throttle position (relative)	07E00145	044185450000	2808	03E800FF0000	Tpr	Generic	%
Ambient	07E00146	044105460000	2808	00010001FFD8	Aat	Generic	-40 - 215 °C
Throttle position (absolute)	07E00147	044185470000	2808	03E800FF0000	Tpa	Generic	%
Engine Runtime	07DF011F	0441051F	2810	0001003C0000	Cet	Generic	Minutes
Catalyst temp C 1	07DF013C	0441853C	2810	00010001FFD8	Ct1	Generic	-40 – 6513℃
Catalyst temp F 1	07DF013C	0441853C	2810	00090005FFD8	Ct1	Generic	xx F
Catalyst temp C 2	07DF013E	0441853E	2810	00010001FFD8	Ct2	Untested	-40 – 6513℃ May not work on Prius
Catalyst temp F 2	07DF013E	0441853E	2810	00090005FFD8	Ct2	Untested	xx F May not work on Prius
MIL Mileage Time	07E0014D	0441054D0000	2810	000100010000	Mti	Generic	0-65535 min
Time since Cleard	07E0014E	0441054E0000	2810	000100010000	Cti	Generic	0-65535 min
Barometric Pressure	07DF0133	04418533	2808	006400450000	BPr	Generic	PSI
Hybrid Pack Remaining Life	07DF015B	0441855B	2808	03E800FF0000	BPL	Untested	0 - 100 % UNTESTED, may not work on Prius
Engine Oil Temp	07DF015C	0441855C	2810	00090005FFD8	OTF	Untested	-40 - xxxxx F UNTESTED, may not work on Prius

Change log:

1.18.2010 First Edition. Problems with MG1/2 torque. Also MG1/2 temp acts funny -- seems too high.
1.21.2010 Added Steering angle passive .. need to fix scale as it's not scaled right now.
1.29.2010 Changed steering angle RXF. Scangauge II bug results in positive number when lower than -99.9
Fixed MG1/2 Temp C -- now uses correct MTH (math)
Added MG1/2 Temp F (untested at this point)
Removed MG1/2 torque in NM entry until I do further testing

	If AMP XGAUGE reads more than -99.9 then you will see readings like 6426 -- this is a ScanGauge II bug in at least firmware 3.17F
	Added and working on ExC, I1C, I2C, DUC and DLC
	Added and working on wheel speed (passive)
1.31.2010	Added Vehicle and Calculated Load
	Added ICE RPM passive gauge, runs at 60fps -- very nice
	Completed ExC, I1C, I2C, DUC and DLC
	Added fuel injector micro-seconds
2.4.2010	Need to fix DLC, DUC --- for now I removed the RXD until I look at my notes
2.6.2010	Put RXD back in for DLC and DUC. Should be correct though I haven't tested.
	Added Inverter Coolant Temp
2.10.2010	Added Regen Cooperation indicates when regen brakes are active
	Added Regen Requested and Operation -- first shows what brake ECU wants and second shows what it is actually getting from Hybrid ECU
2.11.2010	Added Friction Brake Output --> This is supposed to show pressure at wheel cylinders, but I do not think it's working correctly
	Working on Headlight auto-off commands. Might not be possible to set with SGII
	Added A/C compressor power usage (untested right now)
	Added Room Temp in F, but untested and I am not 100% sure on math due to low number of samples
2.20.2010	Added Fuel Level, shows in gallons.
	Added fuel cut discovery .... I don't know which byte represents fuel cut mode yet, so this is to test
2.21.2010	Removed Fuel Cut Discovery -- they didn't work.
	Added 3 "Hybrid Unknown" passive gauges. These come from the Hybrid ECU
	Changed "FRI" to be Brake Pedal Force "BFC" which it actually is...
	Added Friction Braking Sensor "FRI" which will show you how much friction force there is. Should read 0.00-4.20
	Removed Headlight query as it won't work due to the SGII not supporting CAN 5-byte
2.24.2010	Added Battery Charge and Discharge Max (still untested, but I think should be working)
8.23.2010	Added Catalyst Temp F thanks for HKPriustech
8.28.2010	Added Barometric Pressure (Standard OBD-II CAN)
	Fixed Catalyst Temperature (Standard OBD-II CAN)
	Changed engine run time to Minutes
	Preliminary battery temperature readings
8.29.2010	Traction Batter Temp (correct)
	Fixed problem with Catalyst Temp
2.25.2011	Added single frame SoC found by Lobato (motoleon) -- reported working but I haven't tested yet
	- His website: http://lobato.cz.cc/index.html
	- Original thread: http://mitoyotaprius.mforos.com/1727338-tuning-prius-3g/
	- Math wasn't correct on SoC so I fixed
	Updated fuel cut to reflect the fact that fuel cut is accurately reported by looking at CLSD or OPEN LOOP on the SGII.
2.27.2011	Added MG1 and MG2 Carrier frequency. This is what the inverter drives the motors with. Can only show one at a time.
6.24.2011	Added Fuel Level in liters. Have not tested but I think it should work.
7.1.2011	Added Cruise Set fields -- something is still wrong with this one. Does not show correct information.
7.11.2011	Added some new multi-frame XGAUGs thanks for "vincent1449p" from Priuschat.com. I have not personally tested these yet but they have been
	confirmed to work by another user. All of these require minimum of firmware 4.05 on the ScanGauge II or they will not work.
	Added Status column. If it's blank it means the XGAUGE is working properly. Otherwise please note the indicated status of the XGAUGE.
	Fixed Catalyst Temperature Sensor 2 (Untested)
	Added Long and Short term fuel trim (Untested)
	Added Engine Oil Temp and Hybrid Battery Pack (probably won't work on the Gen 3)
11.21.2011	Add Battery Temp 4 and also added correct MTH for all parameters.
	Frank T provided accurate and refined readings for the 4 battery temperature sensors.
	See forums here for more information: (in Spanish) http://mitoyotaprius.foros.com

	Added System Off Time (thanks to Frank T) [update doesn't seem to work]
	Sorted main list alphabetically
11.24.2011	Updated testing status on all main XGAUGES
	Added: Distance since last oil change (reset) -- shows in Miles. Will probably return KM on car with metric MFD
	Added: Disable Traction control. Puts car into Certification mode. Car must be on IGN-ON but NOT ready to set. To go back to normal, turn car off and on again.
	Added: Set HV Battery Cooling fan speed (0-6 with 6 being 100% speed and 0 being off.) After a few seconds fan will go back to normal car control once you change to diff gauge
	Added: Read HV Battery Cooling fan speed (will show 0-6) -- test by setting fan speed
	Added Battery Block Voltage. Thanks to vincent1449p @ Priuschat
	Added Battery Block Resistance. Thanks to vincent1449p @ Priuschat
	See post http://priuschat.com/forums/gen-iii-2010-prius-technical-discussion/64406-scangaugeii-work-2010-a-40.html#post1362631