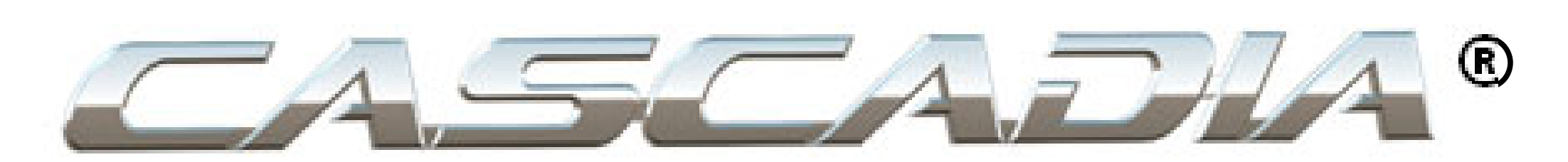




sSAM Pin Layout

STI-538



sSAM

Single Signal Actuation Module

INTERNAL SAM PC BOARD

Category	Pin Name	Pin No.	Function
MQ BUS	MQ-Bus, Switch Bank #1, COM	X513	X111 Trailer Turn Lamp Right
LIN BUS	LIN #3, COM	X514	X112 Trailer Marker Lamps
LIN BUS	LIN #2, COM	X515	X113 Trailer Tail Lamps
CABIN CAN	LIN #1, Stalk/Steering, COM	X516	X131 Trailer Stop Lamps
PRIVATE CAN	SAM_Cab_CAN_H_Cabin	X527	X132 Trailer Turn Lamp Left
PRIVATE CAN	SAM_Cab_CAN_L_Cabin	X536	X21 DRL, Left
POWER SUPPLY	Private CAN High	X717	X22 Marker Lamp, Corner Front Left
POWER SUPPLY	Private CAN Low	X728	X23 Marker Lamp, Corner Front Right
POWER SUPPLY	SAM CAB, GND_P	STG1	X24 DRL, Right
POWER SUPPLY	SAM CAB, BAT 1	ST11	X25 Fuel Level Sensor, Supply
POWER SUPPLY	SAM CAB, BAT 2	ST21	X27 Fog Lamp, Front Left
POWER SUPPLY	Fuel Level Sensor, Feedback	X28	X210 Turn Right Front Corner
POWER SUPPLY	Bi-Stable Relay 1 (House), Feedback	X32	X213 High Beam, Left
POWER SUPPLY	Bi-Stable Relay 2 (House), Feedback	X35	X216 Fog Lamp, Front Right
POWER SUPPLY	Bi-Stable Relay 3 (Basic), Feedback	X36	X218 PT Early Wake Up
POWER SUPPLY	Bi-Stable Relay 4 (Basic), Feedback	X38	X31 Alternator Charging (+), Relay Control
POWER SUPPLY	VPDM BAT 1, Feedback	X39	X33 Mirror Heating, Relay Control
POWER SUPPLY	VPDM BAT 2, Feedback	X312	X34 Ignition (IGN_1), Relay Control
POWER SUPPLY	VPDM CAB Load BAT, Feedback	X315	X37 Trailer Option Power #1, Relay Control
POWER SUPPLY	Light Rotary Switch BC1	X45	X310 Accessory (ACC_3), Relay Control
POWER SUPPLY	Light Rotary Switch BC Redundant	X48	X313 Bi-Stable Relay, House Control, Open
POWER SUPPLY	Light Rotary Switch BC	X411	X316 Bi-Stable Relay, House Control, Close
POWER SUPPLY	Light Rotary Switch NLNSL	X414	X317 Bi-Stable Relay, Basic Control, Open
POWER SUPPLY	Light Rotary Switch BC2	X415	X318 Bi-Stable Relay, Basic Control, Close
POWER SUPPLY	Ignition Switch - Accessory	X51	X41 Electric Horn, Control
POWER SUPPLY	Ignition Switch - Off	X52	X42 Light Rotary Switch, BAT
POWER SUPPLY	Ignition Switch - On (Ignition)	X512	X47 Utility Light #2
POWER SUPPLY	LVD Sense, BAT	X517	X410 Footwell Lamp, Zone 2, PWM (Ambience Light Zone 1)
POWER SUPPLY	Transmission Temperature, Feedback	X520	X413 Light Rotary Switch Backlighting
POWER SUPPLY	Backup Switch	X528	X416 High Beam, Right
POWER SUPPLY	Transmission Neutral Switch	X529	X417 Turn Left Front Corner
POWER SUPPLY	Service Brake Pressure Switch #1 (NO)	X530	X418 Turn Right Front Side
POWER SUPPLY	Park Brake Pressure Switch (NC)	X531	X53 Ignition Switch, BAT
POWER SUPPLY	Park Brake Drag Pressure Switch (NO)	X532	X54 MQ-Bus, Switch Bank #1, PWR
POWER SUPPLY	Top of Clutch, Cruise Control Disable	X534	X55 LIN #3, PWR
POWER SUPPLY	Battery Contactor Control (CLDS), Supply	X63	X56 LIN #2, PWR
POWER SUPPLY	Axle Temperature, Rear, Feedback	X65	X57 LIN #1, Stalk/Steering, PWR
POWER SUPPLY	Axle Temperature, Center/Trans Temperature, Feedback	X68	X58 Tail Lamp, Left
POWER SUPPLY	Axle Temperature, Forward, Feedback	X67	X59 Turn Signal Left, Indicator
POWER SUPPLY	Difflock Status Rear 2 - Center Axle	X611	X518 Turn Signal Right, Indicator
POWER SUPPLY	Low Air Pressure Switches (NO)	X612	X533 Stop Lamps
POWER SUPPLY	Interaxle 2	X613	X611 Battery Contactor Control (CLDS), Open
POWER SUPPLY	Difflock Status Rear 3 - Rear Axle	X614	X62 Battery Contactor Control (CLDS), Close
POWER SUPPLY	Interaxle 1	X615	X68 Backup Alarm
POWER SUPPLY	Difflock Status Rear 1 - FWD Angle	X617	X69 Marker Lamp, Side Left
POWER SUPPLY	Configurable Digital Input #8	X710	X610 Stop/Turn Lamp, Right
POWER SUPPLY	Configurable Digital Input #9	X711	X616 Turn Left Front Side
POWER SUPPLY	Configurable Digital Input #5	X713	X618 License Plate Lamp
POWER SUPPLY	Configurable Digital Input #4	X714	X619 Accent Light 2
POWER SUPPLY	Configurable Digital Input #2	X715	X620 Marker Lamp, Side Right
POWER SUPPLY	Configurable Digital Input #1	X719	X621 Marker Lamp, Front Right
POWER SUPPLY	Configurable Digital Input #3	X720	X622 New Final Drive Control
POWER SUPPLY	Configurable Digital Input #6	X721	X623 Panel Lamps, LED, PWM
POWER SUPPLY	Configurable Digital Input #7	X722	X624 Low Beam, Left
POWER SUPPLY	Configurable Digital Input #10	X723	X625 Backup Lamp 1
POWER SUPPLY	Configurable Digital Input #11	X724	X711 Configurable Low Side Output #1
POWER SUPPLY	Configurable Digital Input #12	X725	X712 Configurable Low Side Output #2
POWER SUPPLY	Primary Air Pressure Sensor, Feedback	X84	X735 Configurable High Side Output #8
POWER SUPPLY	Door Open Switch, Passenger Side, Return	X86	X736 Configurable High Side Output #7
POWER SUPPLY	Hood Tilt Switch	X812	X714 Configurable Low Side Output #4
POWER SUPPLY	Thermal Switch, Feedback	X813	X715 Configurable High Side Output #9
POWER SUPPLY	Washer Fluid Level	X814	X716 Configurable High Side Output #10
POWER SUPPLY	Wiper Parked	X815	X712 Flex Pin Analog Pressure Sensor 1, Supply (internally spliced to X815)
POWER SUPPLY	Alternator Charging (+)	X816	X718 Configurable High Side Output #11
POWER SUPPLY	Secondary Air Pressure Sensor, Feedback	X913	X727 Configurable High Side Output #12
POWER SUPPLY	Bottom of Clutch, Start Control	X915	X728 Configurable High Side Output #2
POWER SUPPLY	Configurable Analog Input #3	X717	X729 Configurable High Side Output #1
POWER SUPPLY	Configurable Analog Input #2	X718	X730 Configurable High Side Output #4
POWER SUPPLY	Configurable Analog Input #1	X719	X731 Configurable High Side Output #3
POWER SUPPLY	Configurable Analog Input #4	X716	X732 Configurable High Side Output #6
POWER SUPPLY	Seat occupation, feedback	X93	X733 Configurable High Side Output #5
POWER SUPPLY	Seat occupation, GND	X94	X734 Flex Pin Analog Pressure Sensor 2, Supply (internally spliced to X914)
POWER SUPPLY	Headlamp, Right, GND_P	X101	X735 Configurable High Side Output #8
POWER SUPPLY	Exterior Lighting, GND_P #2	X102	X736 Configurable High Side Output #7
POWER SUPPLY	Exterior Lighting, GND_P #4	X103	X81 Door Sill Lamp, Driver
POWER SUPPLY	Ground, GND_CR	X104	X82 Door Sill Lamp, Passenger
POWER SUPPLY	Headlamp, Left, GND_P	X111	X85 Primary Air Pressure Sensor, Supply (internally spliced to X712)
POWER SUPPLY	Exterior Lighting, GND_P #3	X112	X88 Tail Lamp, Right
POWER SUPPLY	Ground, GND_DE	X113	X89 Marker Lamp, Front Left
POWER SUPPLY	Ground, GND_P	X114	X810 Door Open Status
POWER SUPPLY	Exterior Lighting, GND_P #1	X26	X811 Optimized Idle Alarm
POWER SUPPLY	Fuel Level Sensor, GND_CR	X212	X818 Accent Light 1
POWER SUPPLY	Interior Lighting, GND_P #1 (FWD Overhead)	X43	X820 Washer Pump, Control
POWER SUPPLY	Interior Lighting, GND_P #1 (FWD Overhead)	X43	X821 A/C Compressor Clutch
POWER SUPPLY	Panel Lamps, GND	X46	X822 Panel Lamps, Bulb, PWM
POWER SUPPLY	Light Rotary Switch, GND	X49	X823 Low Beam, Right
POWER SUPPLY	Transmission Temperature, GND_CR	X521	X825 Wiper High
POWER SUPPLY	MQ-Bus, Switch Bank #1, GND_DE	X522	X825 Mid Dome Lamp, Zone 4A, PWM
POWER SUPPLY	LIN #3, GND_DE	X523	X82 Clearance (Side 2) Lamps
POWER SUPPLY	LIN #2, GND_DE	X524	X82 Identification (Center 3) Lamps
POWER SUPPLY	LIN #1, Stalk/Steering, GND_DE	X525	X85 Park Brake Indicator
POWER SUPPLY	LVD Sense, GND_DE	X526	X87 Sleep Dome Lamp, Zone 4C, PWM
POWER SUPPLY	Axle Temperature, GND_CR	X64	X88 Sleeper Footwell Lamp, Zone 10, PWM (Ambience Light Zone 2)
POWER SUPPLY	Primary Air Sensor, GND_CR	X83	X89 Sleeper Dome Lamp, Zone 4B, PWM
POWER SUPPLY	Interior Lighting, GND_P #3 (Ambient 1)	X819	X910 Stop/Turn Lamp, Left
POWER SUPPLY	Secondary Air Pressure Sensor, GND_CR	X912	X911 Dome Lamp, Forward Overhead (2), Zone 1, PWM
POWER SUPPLY	Clutch Switches Return, GND_DE	X916	X911 Secondary Air Pressure Sensor, Supply (internally spliced to X734)
POWER SUPPLY	Interior Lighting, GND_P #2 (Rear Overhead)	X921	X917 Starter Relay, LSD
POWER SUPPLY	Interior Lighting, GND_P #5 (Reading Sleeper)	X922	X919 Dome Lamp, Forward Overhead (2), Zone 2, PWM
POWER SUPPLY	Interior Lighting, GND_P #4 (Ambient 2)	X924	X920 Utility Light #1
POWER SUPPLY	Interior Lighting, GND_P #4 (Ambient 2)	X924	X923 Starter Relay
POWER SUPPLY	Interior Lighting, GND_P #4 (Ambient 2)	X924	X925 Wiper Low

LOGIC CONTROLLED OUTPUTS

ANALOG INPUTS

GROUND

sSAM Pinning List

Pin Name	Nom Load in Amp @ 25C, 14.2V	Input / Output	Active High / Low	LOAD Type	Battery Supply	Conn No.	Conn No.
SAM_CAB_BAT_1	90	I	AH	input power	BAT_1/BAT_2	ST1	1
SAM_CAB_BAT_2	40	I	AH	input power	BAT_1/BAT_2	ST2	1
SAM_CAB_GND_P	90	O	AL	ECU ground	-	STG	1
Trailer Turn Lamp Right	20	O	AH	bulb/led	BAT_1	X1	1
Trailer Marker Lamps	0.25	O	AL	relay	-	X1	2
Trailer Tail Lamps	0.25	O	AL	relay	-	X1	3
DRL, Left	2.5	O	AH	bulb/led	BAT_1	X2	1
Marker Lamp, Corner Front Left	0.7	O	AH	bulb/led	BAT_1/BAT_2	X2	2
Marker Lamp, Corner Front Right	0.7	O	AH	bulb/led	BAT_1/BAT_2	X2	3
Int. High	0.25	O	AL	bulb/led	BAT_1	X2	4
Fuel Level Sensor, Supply	0.3	O	AH	sensor supply	BAT_1/BAT_2	X2	5
Exterior Lighting, GND_P #1	30	O	AL	bulb/led	-	X2	6
Fog Lamp, Front Left	1.2	O	AH	bulb/led/relay	BAT_1	X2	7
Fuel Level Sensor, Feedback	0.05	I	Analog	sensor feedback	BAT_1/BAT_2	X2	8
Turn Right Front corner	3.5	O	AH	bulb/led	BAT_1	X2	10
Fuel Level Sensor, GND_CR	0.05	I	AL	sensor ground	-	X2	12
High Beam, Left	5.5	O	AH	bulb/led	BAT_1	X2	13
Fog Lamp, Front Right	1.2	O	AH	bulb/led/relay	BAT_1	X2	16
PT Early Wake Up	0.25	O	AL	relay	-	X2	18
Alternator Charging (CH), Relay Control	0.25	O	AL	relay	-	X3	1
Bi-Stable Relay 1 (House), Feedback	0.05	I	Analog	voltage feedback	BAT_1/BAT_2	X3	2
Mirror Heating, Relay Control	0.5	O	AL	relay	-	X3	3
Ignition (IGN_1), Relay Control	1	O	AL	relay	-	X3	4
Bi-Stable Relay 2 (House), Feedback	0.05	I	Analog	voltage feedback	BAT_1/BAT_2	X3	5
Bi-Stable Relay 3 (Basic), Feedback	0.05	I	Analog	voltage feedback	BAT_1/BAT_2	X3	6
Trailer Option Power #1, Relay Control	0.25	O	AL	relay	-	X3	7
Bi-Stable Relay 4 (Basic), Feedback	0.05	I	Analog	voltage feedback	BAT_1/BAT_2	X3	8
VPDM BAT 1, Feedback	0.05	I	Analog	voltage feedback	BAT_1/BAT_2	X3	9
Accessory (ACC_3), Relay Control	1	O	AL	relay	-	X3	10
VPDM BAT 2, Feedback	0.05	I	Analog	voltage feedback	BAT_1/BAT_2	X3	12
Bi-Stable Relay, House Control, Open	1	O	AL	relay	-	X3	13
VPDM CAB Load BAT, Feedback	0.05	I	Analog	voltage feedback	BAT_1/BAT_2	X3	14
Bi-Stable Relay, House Control, Close	1	O	AL	relay	-	X3	16
Bi-Stable Relay, Basic Control, Open	1	O	AL	relay	-	X3	17
Bi-Stable Relay, Basic Control, Close	1	O	AL	relay	-	X3	18
Horn Electric, Control	12.2	O	AH	inductive buzzer	BAT_1	X3	1
Light rotary switch BC	10	O	AH	switch supply	BAT_1/BAT_2	X3	2
Interior Lighting, GND_P #1 (FWD Overhead)	10	O	AL	bulb/led	-	X3	3
Light rotary switch BC1	0.0013	I	Analog	resistor	BAT_1/BAT_2	X3	5
Panel Lamps, GND	10	O	AH	bulb/led	-	X3	6
Utility Light #2	10	O	AH	bulb/led	BAT_1	X3	7
Light rotary switch BC Redundant	0.0013	I	Analog	resistor	BAT_1/BAT_2	X3	8
Light rotary switch BC	0.3	O	AH	switch ground	-	X3	9
Footwell Lamp, Zone 3, PWM (Ambience Light Zone 1)	0.2	O	AH	bulb/led	BAT_1	X3	10
Light rotary switch version	0.05	I	Analog	resistor	BAT_1/BAT_2	X3	11
Light rotary switch backlighting	0.2	O	AH	LED	BAT_1/BAT_2	X3	13
Light rotary switch #205	0.05	I	Analog	resistor	BAT_1/BAT_2	X3	14
Light rotary switch #2	0.0013	I	Analog	resistor	BAT_1/BAT_2	X3	15
High Beam, Right	5.5	O	AH	bulb/led	BAT_1	X3	16
Turn Left Front corner	3.5	O	AH	bulb/led	BAT_1	X3	17
Turn Right Front side	0.52	O	AH	bulb/led	BAT_1	X3	18
Ignition Switch, Accessory	0.052	I	AH	metal contact switch	BAT_1/BAT_2	X3	1
Ignition Switch, Off	0.052	I	AH	metal contact switch	BAT_1/BAT_2	X3	2
Ignition Switch, BAT	0.2	O	AH	switch supply	BAT_1/BAT_2	X3	3
MQ-Bus, Switch Bank #1, PWR	0.2	O	AH	ECU	BAT_1/BAT_2	X3	4
LIN #3, PWR	0.2	O	AH	ECU	BAT_1/BAT_2	X3	5
LIN #2, PWR	0.2	O	AH	ECU	BAT_1/BAT_2	X3	6
LIN #1, Stalk/Steering, PWR	0.2	O	AH	ECU	BAT_1/BAT_2	X3	7
Tail Lamp, Left	0.6	O	AH	bulb/led	-	X3	8
Turn Signal Left, Indicator	1	O	AH	inductive solenoid	BAT_1	X3	9
Ignition Switch, Crank	0.05	I	AH	metal contact switch	BAT_1/BAT_2	X3	11
Ignition Switch, On (Ignition)	0.052	I	AH	metal contact switch	BAT_1/BAT_2	X3	12
MQ-Bus, Switch Bank #1, COM	0.2	C	ANAL	communication	-	X3	13
LIN #3, COM	0.2	C	ANAL	communication	-	X3	14
LIN #2, COM	0.2	C	ANAL	communication	-	X3	15
LIN #1, Stalk/Steering, COM	0.2	C	ANAL	communication	-	X3	16
LVD Sense, BAT	0.05	I	AH	input power	BAT_1/BAT_2	X3	17
Turn Signal Right, Indicator	1	O	AH	inductive solenoid	BAT_1	X3	18
Transmission Temperature, Feedback	0.2	I	Analog	sensor feedback	BAT_1/BAT_2	X3	20
Transmission Temperature, GND_CR	0.3	O	AL	sensor ground	-	X3	21
MQ-Bus, Switch Bank #1, GND_DE	0.2	O	AL	ECU ground	-	X3	22
LIN #3, GND_DE	0.2	O	AL	ECU ground	-	X3	23
LIN #2, GND_DE	0.2	O	AL	ECU ground	-	X3	24
LIN #1, Stalk/Steering, GND_DE	0.2	O	AL	ECU ground	-	X3	25
LVD Sense, GND_DE	1	O	AL	sensor ground	-	X3	26
SAM_Cab_CAN_H_Cabin	0.2	C	ANAL	communication	-	X3	27
Backup Switch	0.04	I	AL	metal contact switch	BAT_1/BAT_2	X3	28
Transmission Neutral Switch	0.04	I	AL	metal contact switch	BAT_1/BAT_2	X3	29
Service Brake Pressure Switch (NO)	0.05	I	AL	metal contact switch	BAT_1/BAT_2	X3	30
Park Brake Pressure Switch (NC)	0.05	I	AL	metal contact switch	BAT_1/BAT_2	X3	31
Park Brake Drag Pressure Switch (NO)	0.05	I	AL	metal contact switch	BAT_1/BAT_2	X3	32
Stop Lamps	0.5	O	AH	bulb/led/relay	BAT_1	X3	33
Top of Clutch, Cruise Control Disable	0.02	I	AL	metal contact switch	BAT_1/BAT_2	X3	34
SAM_Cab_CAN_L_Cabin	0.2	C	ANAL	communication	-	X3	35
Battery Contactor Control (CLDS), Open	0.02	O	ANAL	ECU	-	X3	3
Battery Contactor Control (CLDS), Close	0.02	O	ANAL	ECU	BAT_1/BAT_2	X3	3
Battery Contactor Control (CLDS), Supply	0.02	O	ANAL	ECU	BAT_1/BAT_2	X3	3
Axle Temperature, GND_CR	0.15	O	AL	sensor ground	-	X3	4
Axle Temperature, Rear, Feedback	0.05	I	Analog	sensor feedback	BAT_1/BAT_2	X3	5
Axle Temperature, Center/Trans Temperature, Feedback	0.05	I	Analog	sensor feedback	BAT_1/BAT_2	X3	6
Backup Alarm	2.5	O	AH	inductive buzzer	BAT_1	X3	8
Marker Lamp, Side Left	0.5	O	AH	bulb/led	BAT_1	X3	9
Stop/Turn Lamp, Right	2.1	O	AH	bulb/led	BAT_1	X3	10
Difflock Status Rear 2 - Center Axle	0.04	I	AL	metal contact switch	BAT_1/BAT_2	X3	11
Low Air Pressure Switches (NO)	0.05	I	AL	metal contact switch	BAT_1/BAT_2	X3	12
Interaxle 2	0.3	O	AH	bulb/led	BAT_1/BAT_2	X3	13
Difflock Status Rear 3 - Rear Axle	0.04	I	AL	metal contact switch	BAT_1/BAT_2	X3	14
Interaxle 1	0.04	I	AL	metal contact switch	BAT_1/BAT_2	X3	15
Turn Left Front side	0.52	O	AH	bulb/led	BAT_1	X3	16
Difflock Status Rear 1 - Fwd Angle	0.04	I	AL	metal contact switch	BAT_1/BAT_2	X3	17
License Plate Lamp	0.3	O	AH	bulb/led	-	X3	18
Accent Light 2	0.46	O	AH	bulb/led	BAT_1	X3	19
Marker Lamp, Side Right	0.5	O	AH	bulb/led	BAT_1	X3	20
Marker Lamp, Front Right	0.5	O	AH	bulb/led	BAT_1	X3	21
New Final Drive Control	1.2	O	AH	inductive solenoid	BAT_1	X3	22
Panel Lamps, LED, PWM	4.2	O	AH	bulb/led	BAT_1	X3	23
Low Beam, Left	5.5	O	AH	bulb/led	BAT_1	X3	24
Backup Lamp 1</							