

TinyDash

This document is intended for use by a technical audience and describes a number of procedures that are potentially hazardous. Installations should be carried out by competent persons only.

Syvecs and the author accept no liability for any damage caused by the incorrect installation or configuration of the equipment.

Please Note that due to frequent firmware changes certain windows might not be the same as the manual illustrates. If so please contact the Syvecs Tech Team for Assistance.

Support@Syvecs.com

Table of Contents

Introduction	3
Specifications	3
Using this manual	4
Pin Connections	4
General Connections	5
Connecting Power/Ground	5
Input Connections	6
Voltage Inputs - AN	6
Wiring Guidance	6
Example Schematic	6
Pin Schedule	6
Low Side Outputs	7
Wiring Guidance	7
Example Schematic	7
Pin Schedule	7
Calibration Switch / Cal Up / Down Switch	8
Example Schematics	8
Pin Schedule	8
Gear Position Setup	9
CanBus Communications	10
ODBII Connections	10
Direct CAN connection	
Generic Can Receive	
Example Wiring	12
PC Connection - SCAL	13
TinyDash Calibration	14
OBD2 Setup	14
Layout Setup	15
Layouts Available	16
Alarms	17
Input - Sensor Setup	
Output Testing	19
Strategy Help	20
Supported CAN Streams	21



The TinyDash is a compact and powerful display designed to offer customers vital real time information from their vehicles electronics.

The palm sized unit has been designed with simplicity in mind and to ensure users a hassle free installation process. It requires only one switched 12v supply along with a two wire CAN bus connection.

Being specialists in OEM CAN data decoding, we have added many popular OEM data streams into the TinyDash software as well as after-market ECU company data. This enables instant access to vehicle operating parameters via the 2.4 inch screen. A list of support vehicles / ECU's can be found on the last page.

Two low current PWM outputs are present on the TinyDash and can be setup to do custom tasks via our SCAL software. Please note these outputs will only handle 1 amp of continuous current so mainly used for warning light or to trigger a relay.

Four analog inputs are also present on the TinyDash and have software selectable 3k pull-ups present to allow not only 0-5V ADC reading but 0-5v Thermistor sensors data. These are particularly useful if you are I/O limited in your installation and wish to send voltage or sensor data to your engine controller via CAN in another section of the vehicle. The custom CAN transmit and flexible CAN sections of our SCAL software make this really easy.

Specifications

Outputs

2 x PWM Outputs - 2Amp Peak (100ms) / 1Amp Continuous 1 x 5V Sensor Supply (400ma Max)

Inputs

3 Analogue/Thermistor Inputs (0-5V) with software pull-up

Interfaces

USB C For Updates and Configuration 1 x CAN 2.0B, user programmable

Power Supply

6 to 26V ignition switched supply

Physical

Harwin Datamate Connector 78mm x 50mm x 20mm

Environmental

High-quality anodised CNC aluminium body and military spec wiring (Tyco Spec44) ensures a rigorous and long-term use.

Using this manual

This manual highlights important information, warnings or useful tricks with the following colours:

Text in ORANGE describes a step that may be required or information that is important for correct operation.

Text in RED are Warnings and must be followed when installing or operating the unit, failure to do so may damage the unit and will not be covered under warranty.

Letters **highlighted** and <u>underlined</u> in software instructions such as <u>D</u>evice > <u>P</u>rogram are keyboard shortcuts. For example program the device by pressing keyboard letter <u>D</u> followed by letter <u>P</u> when using SCal.

As you become more familiar with these shortcuts, the Syvecs SCal becomes very fast to use.

Pin Connections



Looking into back of header, loom side

Mating connector PN: M80-4131098 Pin PN: M80-2060005

Description	Pin Number	Function	Wire Colour
12V	1	Switched 12V	Red
CANL	2	CAN Low	Yellow
CANH	3	CAN High	White
GROUND	4	Ground	Black
AN1	5	0-5v Analogue Input	Green
AN2	6	0-5v Analogue Input	Green
AN3	7	0-5v Analogue Input	Green
5v Out	8	5v Sensor Supply	Grey
LSO1	9	Low Side Output	Pink
LSO2	10	Low Side Output	Purple

General Connections

Connecting Power/Ground

The TinyDash unit needs a single ignition 12v supply and single ground connection, as the unit does not consume much current a wire gauge of AWG24 or less can be used.

Warning: The unit must be powered from a fused source, 2A is sensible rating.





Pin Number	Function	Notes
1	VBAT	Use a fused Switched feed.
4	Power Ground	Ground for Power and Sensor Signal

Input Connections

Voltage Inputs - AN

Four Analogue Inputs are available on the TinyDash. These are just 0-5v analogue inputs and cannot support frequency waveforms. They are designed for sensors like pressure transducers, thermistors, switches or position sensors.

All of the inputs have an optional 3k Pull up, which allows them to be used for thermistor sensors as well.

Wiring Guidance

All sensors use the power ground as the sensor ground. The sensor signal output can then be connected to any one of the three AN inputs.



Pin Number	Function	Notes
4	Ground	May be shared with multiple sensors
5	AN1 Input	Any AN Input can be used

Low Side Outputs

There are two low side outputs available on the TinyDash. They support 2 amp peak/1 amp continuous loads. They are suitable for driving relays and most boost solenoids.

Wiring Guidance

We recommend that each device being switched has its own 1 Amp fuse. This is to protect the low side drivers from damage due to excess current.



Pin Number	Function	Notes
9	LSO1	Low Side Output

Calibration Switch / Cal Up / Down Switch

The TinyDash allows users to have a physical calibration switch wired to the device or virtual switch setup via CAN.

A physical switch can be done in multiple ways, first method is using the Syvecs 12Way rotary switch - https://www.syvecs.com/product/calibration-switch/

Second method is with a resistor chain up and Down switch setup which allows calibrators to set a low and high voltage threshold for each switch position.

Third method is via a single Cal Up Switch which cycles through all the positions and resets at a set Cal position back to 1.

Physical switches need to be assigned in the I/O configuration – Pin assignments. Virtual switch setup via the OEM Preset CAN receive or via the Generic CAN receive strategy.

The TinyDash can also transmit the current Cal Selection position via CAN bus to other units like our engine control units. This saves inputs on the ECU and also additional wiring.

Example Schematics



Pin Schedule

Pin Number	Function	Notes
4	Ground	May be shared with multiple sensors
7	AN3	Any AN input is supported

The Syvecs 12 position calibration switch is set in Scal by setting the voltage thresholds for each position in the below map. CalSelect will then update when the voltage is greater then set in the corresponding cell.

Note: If using a syvecs supplied Cal Switch you must have the Input Pull-up enabled.

S 5Gi 2.15.321	_ # ×
Ele Cal Pastecal Device Gauge Worksheet View ID(GENERIC) Dev(S_TINYDASH #65535) SwVer(1.1.1/1)	CONNECTED 🥚
NERU 1 Auto Selector Auto Trans Centre Diff Custom Dampers Datastream DBW pos DBW SETUP Fan Control GCUDatastream GenericRX H Bridge Testing Injector Pulse Lambda Lin Nissan Fan RePPR DI SBV C	orrection test Torque Control Torque Control NEW TPS/APP# Tuning Yamaha Diff
Calibration Calibration Switch Caustom PVM4 11 [Renamable] Caustom PVM4 2 [Custom PVM4 2] [Renamable] Datastrees Sension Sension Art Temp	(pn 0 exit 0.0 exit 0.0 (ship) 0.00 main 0.00
Calibration Switch	gaar PARK vehicleSpeed 0.0
I Buskatovi ning Tradukt Voltages I aput Pulup Hearrum Poston Himmum Poston I Egons Seved I tylector Duty I tambda Mas Ar Fow Manifold Ar Pressure I Tradite Poston Sensor Remanable Items I Co Setup I D Configuration I D Configu	#41V 0.000 #20V 0.000 #20V 0.000 #20V 0.007

Gear Position Setup

Gear position can be displayed on any Layout but its best to be viewed on Layout 7 which display the gear across the whole screen in a portrait position. Note: the orientation of this can be flipped in the LCD Setup area of Scal.

There is multiple ways the gear can be picked up with the TinyDash, these are listed below:

Preset CAN Receive – If the OEM or Aftermarket ECU has the ability to transmit Gear on the CANbus it will be picked up a displayed.

Generic CAN Receive - Calibrators can setup in Scal to receive the gear via a custom CAN RX setup

Gear Barrel / Position Sensor – Most Sequential gearboxes will come fitted with a gear position sensor that outputs a voltage for each barrel position. In Scal the calibrator can assign the voltage for each gear position.



Gear from wheel speeds – If VehicleSpeed and Rpm are being picked up by the TinyDash then calibrators can enable the map Gear position from wheel speed. This calculates gear from DriveRatio (Rpm/Speed). Setting a drive ratio amount for each gear below then allows the gear to be decoded.

In Gear Voltages - f(gear)	
Enable Gear Position from Wheel Speeds	gear Drive Ratios(rpm/kph)
Drive Ratios - f(gear)	FIRST 150.0rpm/kph (0.0 / 0.0%)
HeadLight	
Lambda 1 Sensor	2 ²⁰⁰⁰
Launch Select Switch	물 200.0 년
Mass Air Flow Sensor 1	5 150.0 b
Manifold Pressure Sensor 1	89 100 0
Throttle Position Sensor	100.0 T
Traction Select Switch	§ 50.0
Alarms	0.0
LCD Setup	
 IO Configuration 	
Output Testing	
	gear (i)



CanBus Communications

Common **A**rea **N**etwork Bus (CAN Bus) is a widely used data interface common used in many cars and aftermarket accessories, such as Data loggers and Dashes. The TinyDash as default has 1 x CAN bus interface and this does not have 120ohm termination resistor present.

There are two ways of interfacing to the TinyDash.

- 1. Hard wired directly to the vehicle/ECU CANbus (best option)
- 2. Connect to the ODBII diagnostic port.

ODBII Connections

The TinyDash controller supports the OBD2 Data receive protocol allowing users to retrieve data via the OEM ECU OBD2 protocol making installation very straightforward. (please note: Not ever manufacture supports the SAE J1979 protocol we use)

Example Schematic



The OBD2 CAN wires need to be connected or as shown above and connected to CAN1 on the TinyDash module. Configuration is explained in the software section of this manual.

Direct CAN connection

TinyDash supports direct CAN connection to the vehicle or ECU data bus. This is a very powerful way of getting very fast real time vehicle running data.

At the end of this manual is the list of supported OEM vehicles / Aftermarket Ecu's which Syvecs support and it's expanding all the time. **Please Note**: OEM Vehicle don't all have the power-train CAN available at the OBD2 connect, users may need to connect on the CAN at the ECU location.

If the vehicle/Ecu you wish to connect to is not present then Syvecs also have a generic receive section for allowing calibrators to set a custom CAN receive setup.

Connecting the CAN network on your car needs to be done at the ECU location to ensure the powertrain CAN messages are present. T into the CAN wires and run them to the TinyDash.

No Termination Resistor is present on the TinyDash

Generic Can Receive

The generic CAN receive section allows for calibrators to setup the items they wish to display on the TinyDash by setting the Identifier, Start Bit, Length, and scaling.

The easier way to setup the Generic CAN is to create a worksheet and add in all the maps like below to make each CANRX* maps line up.

SCal 2.15.321	SGI 2.15.321														
File Cal Pastecal	le çal Bastecal Device Gauge Worksheet View 1D(GENERIC) Dev(S_TRIYDASH #0001) SwVer(1.1.1/1)														
MENU 1 Auto Sele	ector Auto Tra	ns Centre Diff C	Custom Damp	ers Datastream		DBW SETUP Fai	Control (SCUDatastream Gener	CRX H Bridge Testing 1	jector Pulse Lambda Lin N	lissan Fan RelFPR DI SBV Co	rrection Test Torque Co	ntrol Torque Control NEV	W TPS/APP# Tuning w Yamaha Diff	
											ESC Taskhar Edit (Ontions Select Math	Learn Nearsation	rpm	0
											Too Langer Tour	Theorem Torone Tar	Tourouter	ert	0.0
														eop	0.0
														fp	0.0
N Recieve / Rec	eve Col	ecieve / Rece	ive Ide	ve / Receive	Sta	/ Receive Bi	Leotx	CAN Recieve / Reci	ewe Endian / Signed 📑	X Datastream / Generic	CAN Recieve / Raw Scen X	eneric CAN Recieve /	Raw (DsX	lam1	1.000
CANRy01 r	nm	CANRy01	600b (000	CANRy01		CANRy01	16(0/	Endlan and Signed Se	CANRy01 NO	CANRy01 1.00	0000000 (0 00000000 / 0	CANRy01 0 (0 /	2296)	maf1	0.000
Connect 1	8.00	Ci u lioto 1	00000 (0000	Chillion		Chillotor	10 (0)	Endian an	d Signed Setup	010001 1100		0 0 0 0 0 0		map1	1400
									Little Endian Signed					trqDemand	0.0
CANRx01		CANRx01	600h	CANRx01		CANRx01		CANRx01	NO NO	CANRx01	1.000000000	CANRx01		troActual	0.0
CANRx02	SPARE	CANRx02	600h	CANRx02	0	CANRx02	16	CANRx02	NO NO	CANRx02	1.000000000	CANRx02		calOverideSwitch	OFF
CANRx03	SPARE	CANRx03	600h	CANRx03	32	CANRx03	16	CANRx03	NO NO	CANRx03	1.000000000	CANRx03		calDownSwitch	OFF
CANRX04	SPARE	CANRXU4	600h	CANRX04	0	CANRX04	16	CANRX04	NO NO	CANRXU4	1.000000000	CANRXU4		caUpswitch IcSelect	LO1
CANRXUS	SPARE	CANROUS	601h	CANRXU5	32	CANROUS	16	CANROUS	NO NO	CANRXUS	1.00000000	CANRXUS		tcSelect	TON
CANRXUG	SPARE	CANRXUD	COOK	CANRXUB	0	CANRXUB	10	CANRXUB	NO NO	CANKXUD	1.00000000	CANRXUB		gear	PARK
CANRX07	SPARE	CANRX07	608h	CANRX07	48	CANRX07	10	CANRX07	NO NO	CANRX07	1.000000000	CANRX07		headight	OFF
CANPyco	SDADE	CANRXUS	609h	CANRX08	16	CANPOR	16	CANRXUS	NO NO	CANRXUS	1.00000000	CANRXUS		SvOut	4.923
CANRy10	SPARE	CANRy10	609h	CANRx10	32	CANRx10	16	CANRy10	NO NO	CANRX09	1.00000000	CANRy10		an01V	0.004]
CANRy11	SDARE	CANRy11	609h	CANRy11	48	CANRy11	16	CANRy11	NO NO	CANRy11	1.000000000	CANRy11		an02V	0.005
- CANRy12	SPARE	- CANRy12	60Ab	- CANRy12	0	- CANRy12	16	- CANRy12	NO NO	- CANRy12	1.000000000	- CANRy12		an03V	0.006
CANRx13	SPARE	CANRx13	60Bh	CANRx13	Ő	CANRx13	16	CANRx13	NO NO	CANRx13	1.000000000	CANRx13		TinyDash V1	
S CANRx14	SPARE	S CANRy14	60Bh	S CANRx14	16	S CANRx14	16	S CANRy14	NO NO	S CANRx14	1.000000000	S CANRx14		S_TINYDASH 1.1.1 GENERIC #00001	
CANRx15	SPARE	8 CANRx15	60Ch	& CANRx15	0	8 CANRx15	16	8 CANRx15	NO NO	8 CANRx15	1.000000000	& CANRx15		Cai good	
CANRx16	SPARE	CANRx16	60Ch	CANRx16	32	CANRx16	16	CANRx16		CANRx16	1.000000000	CANRx16			
CANRx17	SPARE	CANRx17	60Eh	CANRx17	0	CANRx17	16	CANRx17	NO NO	CANRx17	1.000000000	CANRx17			
CANRx18	SPARE	CANRx18	60Eh	CANRx18	16	CANRx18	16	CANRx18		CANRx18	1.000000000	CANRx18			
CANRx19	SPARE	CANRx19	60Fh	CANRx19	0	CANRx19		CANRx19	NO NO	CANRx19	1.000000000	CANRx19			
CANRx20	SPARE	CANRx20	60Fh	CANRx20	16	CANRx20	16	CANRx20	NO NO	CANRx20	1.000000000	CANRx20	0		
CANRx21	SPARE	CANRx21	60Fh	CANRx21	32	CANRx21	16	CANRx21	NO NO	CANRx21	1.000000000	CANRx21			
CANRx22	SPARE	CANRx22	60Fh	CANRx22	48	CANRx22	16	CANRx22	NO NO	CANRx22	1.000000000	CANRx22			
CANRx23	SPARE	CANRx23	610h	CANRx23	0	CANRx23	16	CANRx23	NO NO	CANRx23	1.000000000	CANRx23			
CANRx24	SPARE	CANRx24	610h	CANRx24	16	CANRx24	16	CANRx24		CANRx24	1.000000000	CANRx24			
CANRx25	SPARE	CANRx25	610h	CANRx25	48	CANRx25	16	CANRx25	NO NO	CANRx25	1.000000000	CANRx25			
CANRx26	SPARE	CANRx26	611h	CANRx26	48	CANRx26	16	CANRx26	NO NO	CANRx26	1.000000000	CANRx26			
CANRx27	SPARE	CANRx27	613h	CANRx27	0	CANRx27	16	CANRx27	NO NO	CANRx27	1.000000000	CANRx27			
CANRX28	SPARE	CANR/28	613h	CANRx28	16	CANRx28	16	CANRx28	NO NO	CANRx28	1.000000000	CANRx28	0		

Above you can see the RPM is setup to be received from CAN ID 0x600, data is not Little Endian, value is signed, scaling is 1.00 and is being picked up from start bit 0 with a length of 16 bits.

More info can be found on <u>www.youtube.com/SyvecsHelp</u>. Search for Generic Can Receive.

Please note: Any Item which is assigned in Pin Assignments will take its data from the Pin assignment and ignore the Generic CAN Rx data.



Pin 1 – 12v Pin 3 – CAN H Pin 4 – Ground Pin 5 – Calibration Switch Pin 10 – Boost Solenoid

PC Connection - SCAL

In order for the TinyDash to work it must have a valid calibration present in the device and when shipping from the factory no calibration is loaded to ensure calibrator's setup the configuration to suit the installation.

A USB C port is found on the back of the TinyDash which is used for calibration changes on the device.

The S-Suite software can be downloaded from below. https://www.syvecs.com/software/

After running the SSuite installer, open SCal and click <u>D</u>evice > <u>C</u>onnect. You will be asked "How do you wish to access this device". Click OK.

How do you wish to access t	his device		
S_TINYDASH#0001 1-1-1 G S_TINYDASH#0001 1-1-1 G	ENERIC	Basic : Clea	arLogbook - Action not permitted
ок	Cancel	<u>R</u> escan	Security

Next you can load a calibration if you have one saved from a previous installation or program defaults if new installation.

Device has no calibr Dev(S_TINYDASH # ID(GENERIC) SwVer(1.1.1)	ation ±0001)
Program <u>D</u> efaults	Load Disk Cal User Update
	Cancel

The TinyDash will now connect. This status will be displayed in on the top right hand corner of SCal. A green indicator and Connected will be displayed.



 LCD Brightness Day Brightness Night Brightness LCD Page 1 	TIP When navigating within SCal you will note that some configuration settings are in blue and others green. All green settings take effect immediately, and do not require programming. Settings highlighted in blue need to be programmed before the changes take effect.
Page Setup - f(Gauge Positon) Text Colour	

Calibrators now have the ability to setup the TinyDash live.

Press F1 for help on any map and remember that Calibration names highlights in Green are adjustable Live and changes are immediate. Blue Maps require programming (Device > Program) to take effect.

TinyDash Calibration

OBD2 Setup

The TinyDash controller supports the OBD2 Data receive protocol, allowing users to grab item data if it's present on the OEM ECU OBD2 protocol making the installation even simpler.

OBD2 Supports: Rpm, Tps, Torque Actual, Torque Demand, Maf1, Map1, ACT, ECT, Lam1, Speed

Select the input they wish to assign OBD2 data on and then select the OBDII: Item best suited. **Example**: Air Charge Temp – OBDII ACT

Users need to Device - Program the controller after for the setting to be applied

A) Inputs : Air Charge Temp	NOT CONNECTED	
A) Inputs : Calibration Down Switch	NOT CONNECTED	
A) Inputs : Calibration Override Switch	NOT CONNECTED	A MICH COMMENTANT A
A) Inputs : Calibration Select Switch	NOT CONNECTED	AN1 : C1-05
A) Inputs : Calibration Up Switch	NOT CONNECTED	AN2:C1-06
A) Inputs : Engine Speed	NOT CONNECTED	AN3 : C1-07
A) Inputs : Lambda 1	NOT CONNECTED	AN4 : C1-08
A) Inputs : Launch Control Select Switch	NOT CONNECTED	OBDII:ACT
A) Inputs : Manifold Air Pressure 1	NOT CONNECTED	OBDII:Lambda
A) Inputs : Mass Air Flow 1	NOT CONNECTED	OBDII:Lambda2
A) Inputs : Throttle Position	NOT CONNECTED	OBDII:Load
A) Inputs : Torque Actual	NOT CONNECTED	OBDII:MAF
A) Inputs : Traction Control Select Switc	h NOT CONNECTED	OBDII:MAP
A) Inputs : Vehicle Speed	NOT CONNECTED	OBDII:RPM
B) Outputs : Custom PWM 1 [Custom PV	VM 1] NOT CONNECTED	OBDII:Speed
B) Outputs : Custom PWM 2 [Custom PV	VM 2] NOT CONNECTED	OBDII:Torque
		OBDII:TPS

Multiple items can be assigned at the same time

IO Configuration / Pin Assignments	
Pin Use	
A) Inputs : Lambda 1 OBDII:Lambda2 :	
A) Inputs : Air Charge Temp	OBDII:ACT :
A) Inputs : Calibration Down Switch	NOT CONNECTED
A) Inputs : Calibration Override Switch	NOT CONNECTED
A) Inputs : Calibration Select Switch	NOT CONNECTED
A) Inputs : Calibration Up Switch	NOT CONNECTED
A) Inputs : Crankcase Pressure	NOT CONNECTED
A) Inputs : Engine Coolant Temp	OBDII:ECT :
A) Inputs : Engine Oil Pressure	NOT CONNECTED
A) Inputs : Engine Oil Temp	NOT CONNECTED
A) Inputs : Engine Speed	NOT CONNECTED
A) Inputs : Fuel Pressure	NOT CONNECTED
A) Inputs : Headlight Switch	NOT CONNECTED
A) Inputs : Lambda 1	OBDII:Lambda2 :
A) Inputs : Launch Control Select Switch	NOT CONNECTED
A) Inputs : Manifold Air Pressure 1	NOT CONNECTED
A) Inputs : Mass Air Flow 1	NOT CONNECTED
A) Inputs : Throttle Position	NOT CONNECTED
A) Inputs : Torque Actual	NOT CONNECTED
A) Inputs : Traction Control Select Switch	NOT CONNECTED
A) Inputs : Vehicle Speed	NOT CONNECTED
B) Outputs : Custom PWM 1 [Custom PWM 1]	NOT CONNECTED
B) Outputs : Custom PWM 2 [Custom PWM 2]	NOT CONNECTED
B) Outputs : Wastegate Anti-Phase Control	NOT CONNECTED
B) Outputs : Wastegate Phase Control	NOT CONNECTED

Layout Setup

Multiple layouts are available on the TinyDash and each layout can also have different data sets based on the calibration switch position.

Calibration Switch	
Calibration Selection On Overide - f(calSelect)	
Calibration Selection Reset	
Layout Control	
LCD Layout Selection - f(calSelect)	calSelect Selected LCD Layout
LCD Item Set Selection - f(calSelect)	CALU1 Layout 1
Wastegate Control	Laurent 7
Custom PWM 1 [Custom PWM 1] [Renamable]	
 Custom PWM 2 [Custom PWM 2] [Renamable] 	g Layout 6 -
Wastegate Control	غ Layout 5 –
Datastream	e lavout 4 –
Sensors	
Alarms	
LCD Setup	of Layout 2 -
V IO Configuration	
Pin Assignments - f(Pin Use)	1111 10 00 00 00 00 00 00 00 00 00 00 00
Car Coding	ਕ ਕ ਕ ਕ ਕ ਕ ਕ ਕ ਕ ਕ ਕ ਕ ਕ ਕ
Output Testing	calSelect

Under each Layout area is a setup map which allows users to input the items they wish to display. 4 layout sets are available meaning a layout style can display 6 different sets of items which are selectable under Calibration Switch – Layout Control



Users can also adjust the following in the LCD Setup area:

- Background Colour
- Text Colour
- Box Colour
- Orientation
- Brightness

LCD Setup
CD Brightness
Day Brightness
Night Brightness
Alarm Brightness
LCD Orientation
Rotate Portrait Layouts
Rotate Landscape Layouts
LCD Layout 1
Layout Setup - f(Gauge Positon, Item Set)
Text Colour
Box Colour
Background Colour
Alarm Colour

Layouts Available

ACT	0.0
ECT	0.0
EOP	0.000
FP	0.000
LAM1	1.000
MAP1	0

ECT	0.0
MAP	Θ
IJ%	0.0
LAM	1.000













Alarms

Many Alarms can be set on the TinyDash unit, When an alarm is active it will bring up a red warning on the LCD Panel and also set a warning in Scal - AlarmActive



Custom alarms are easily configurable from the Alarm menu, for an alarm to trigger it must either be above a configurable maximum threshold, or under a minimum threshold.

Alarms active RPM threshold allows you to turn off all alarms beneath a configured RPM limit. For example set that to 100RPM and the alarms will stop if the engine comes to a stop.

V TPS/APP# Tuning w Yamaha Di	f
rpm	0
act	0.0
ect	0.0
eop	0.0
fp	0.0
fuelDutyPri	0.0
lam1	1.000
maf1	0.000
map1	0
tps	0.0
trqDemand	0.0
trqActual	0.0
calSelect	CAL01
calOverideSwitch	OFF
calDownSwitch	OFF
calUpSwitch	OFF
kSelect	LC01
tcSelect	TC01
gear	PARK
vehicleSpeed	0.0
headlight	OFF
lcdBrightness	100.0
AlarmActive	NONE
5vOut	4.924
an01V	0.007
an02V	0.007
an03V	0.002

Where a minimum and maximum threshold exists such as the battery, the alarm will sound if it goes outside of either of those thresholds

The duration of the alarm is configured in "Alarm Hold Duration", and this sets the time the Alarm warning page is active for. After this time has passed another timer starts to set when the alarm page will display again. This can be adjusted in "Alarm Hold Off Duration"

Alarms

Engine Speed Breakpoints Manifold Pressure Breakpoints Mass AirFlow Breakpoints Alarm Hold Duration Alarm Hold Off Duration Alarm Enable Engine Speed Threshold Air Charge Temp Maximum Crank Case Pressure Maximum Engine Coolant Temp Maximum Engine Oil Temp Maximum Engine Oil Pressure Mininum Exhaust Gas Temp Maximum Fuel Pressure Mininum Manifold Pressure Maximum Vehicle Speed Maximum Battery Voltage Maximum Battery Voltage Mininum Lean Lambda Source Lambda Limp Time Desired Lambda - f(rpm,map1)

Note:

The Alarm page will only be displayed once if the item which is in alarm is present on the layout, are which point the item will change to Red on the screen to warn the user

Layout5 will not display an Alarm

Input - Sensor Setup

The Tinydash has three 0-5v inputs available and these can be selected in the I/O Configuration – Pin Assignments

O Configuration / Pin Assignments			
in Use			
A) Inputs : Air Charge Temp NOT CONNECTED			
A) Inputs : Air Charge Temp	NOT CONNECTED		
A) Inputs : Calibration Down Switch	NOT CONNECTED		
A) Inputs : Calibration Override Switch	NOT CONNECTED		
A) Inputs : Calibration Select Switch	NOT CONNECTED	AN1 : C1-05	
A) Inputs : Calibration Up Switch	NOT CONNECTED	AN2 : C1-06	
A) Inputs : Crankcase Pressure	NOT CONNECTED	AN3 : C1-07	
A) Inputs : Engine Coolant Temp	NOT CONNECTED	OBDII:ACT	
A) Inputs : Engine Oil Pressure	NOT CONNECTED	OBDII:ACT2	
A) Inputs : Engine Oil Temp	NOT CONNECTED	OBDII:ECT	
A) Inputs : Engine Speed	NOT CONNECTED	OBDII:ECT2	
A) Inputs : Fuel Pressure	NOT CONNECTED	OBDII:Lambda	
A) Inputs : Headlight Switch	NOT CONNECTED	OBDII:Lambda2	
A) Inputs : Lambda 1	NOT CONNECTED	OBDII:Load	
A) Inputs : Launch Control Select Switch	NOT CONNECTED	OBDII:MAF	
A) Inputs : Manifold Air Pressure 1	NOT CONNECTED	OBDII:MAP	
A) Inputs : Mass Air Flow 1	NOT CONNECTED	OBDII:RPM	
A) Inputs : Throttle Position	NOT CONNECTED	OBDII:Speed	
A) Inputs : Torque Actual	NOT CONNECTED	OBDII: Torque	
A) Inputs : Traction Control Select Switch	NOT CONNECTED	OBDII: TPS	
A) Inputs : Vehicle Speed	NOT CONNECTED		
B) Outputs : Custom PWM 1 [Custom PWM 1]	NOT CONNECTED	OK Cancel	
B) Outputs : Custom PWM 2 [Custom PWM 2]	NOT CONNECTED		
B) Outputs : Wastegate Anti-Phase Control	NOT CONNECTED		
B) Outputs : Wastegate Phase Control	NOT CONNECTED		

Once assigned the calibrator can head to the sensors area to setup the input assigned.



Input Type Select – Allows either a 5V or Thermistor to be selected. When thermistor is selected a 3K pull up resistor is enabled on the Input.

Input High Voltage Error Threshold – Sets the high voltage level for which the TinyDash will class the input in Error

Input Low Voltage Error Threshold – Sets the low voltage level for which the TinyDash will class the input in Error

Default Sensor Reading – When the input is in Error the value in this map will applied on the Item

Filter Constant – Amount of recursive filtering to be applied to the Signal, higher the value = more filtering

Linearisation – Sets the input voltage to sensor units applied on the item

Output Testing

The TinyDash outputs can be tested live with our Syvecs - Scal program and information on connecting to the unit can be found in the PC Connection section of the manual. After connecting to the unit via USB, users will see an area at the bottom of the calibration tree called output testing.

S Sci 2.15.321		_ Ø ×
Ele <u>Cal Pastecal Device</u> Gauge Worksheet View ID(GENERIC) Dev(S_TRIVDASH #655335) SwVe(1.1.1/1)		CONNECTED
NERU 1 Auto Selector Auto Trans Centre Dff Custom Dampers Datastream DBW pos DBW SETUP Fan Control GCUDatastream GenericitX H Bridge Testing Injector Pube Lambda Lin Nissan Fan ReFPR DI SBV Correction test Torque Control NEW	TPS/APP# Tuning Yamaha Diff	
Calibration Switch Calibration NWkth Custom PWW 1 [Renarmable] Custom PWW 2 [Custom PWW 2] [Renarmable] Datatesen Sensors Sensors Renarmable Items CD Setup	[26] 4년 5년(26)-2년 1987 1987년 1987년 1987 1987 1987 1987 1987 1987 1987 1987	0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0
Di Ocnifiuration	an01V	0.012
Output Test Mode Enable (Do NOT REROBAN ON) Low Side Output Fraquency - f(LSO Select) Low Side Output Test Duty - f(LSO Select)	9-03V 2004V	0.012

Here users are able to test the functions of each output by itself without the need for any master/slave CAN communication.

NOTE: / Low Side Output Frequency maps must be set and programmed onto the device for the output testing logic of these outputs to apply. You cannot change these maps when **Output Test Mode Enable** is enabled.

Remember that Calibration names highlights in Green are adjustable Live and changes are immediate. Blue Maps require programming (Device > Program) to take effect.

Set a frequency you wish the outputs to be driven at in **LowSide Output Frequency.** Device – Program for it to be saved. Then enable **Output Test Mode Enable** map.

Now you can then set a duty for each output to be driven in Low Side Output Test Duty, these maps can be adjusted live.

Strategy Help

All the strategies/maps on the TinyDash controller have help text available for them. This is shown by pressing F1 on the keyboard when in Scal when a calibration is open.

Siscal 2.15.321		_ Ø X
Ele Cal Pastecal Device Gauge Worksheet View ID(GENERIC) Dev(S_TINYDASH #65535) SwVer(1.1.1/1)		CONNECTED 🔴
MENU 1 Auto Selector Auto Trans Centre Dff Custom Dampers Datastream DBW pos DBW SETUP Fan Control GCUDatastream GenericRX H Bridge Testing	Injector Pulse Lambda Lin Nissan Fan RelFPR DI SBV Correction test Torque Control	Torque Control NEW TPS/APP# Tuning Yamaha Diff
Calibration		rpm 0
Calbration Switch		ect 0.0
Custom PWM 1 [Custom PWM 1] [Renamable]		fuelDutyPri 0.0 Jami 0.00
Custom PWH 2 [Custom PWH 2] [Renamable]		maf1 0.000
Output Type	Output Type(%)	map1 0 tos 0.0
PWM Frequency	LOW SIDE	trgDemand 0.0
Custom PWM 2 X Axis [ect] Breakpoints		dear 0.0
Custom PWM 2 Y Axis [vehicleSpeed] Breakpoints	HALF BALLORE	vehicleSpeed 0.0
Drive Duty - f(ect,vehicleSpeed)		an01V 0.012
Enable When Engine Stopped		an02V 0.015
Datastream		an03V 0.011 an04V 0.012
CAN1 Bus Speed	36	
Syvecs CAN Recieve		
Syvecs CAN Receive Enable	How we have a second seco	
Receive Identifer - f(,item)	BO CONTRACTOR	
Receive Slot - f(,Item)		
Recieve S7 Fixed Stream (CAN1)		
Generic CAN Recieve		
Preset CAN Recieve	LOW SIDE	
Generic CAN Transmit		
Flexible CAN Transmit		
Sensors		
Air Temp		
Calbration Switch		
Stablisation Time		
Threshold Voltages		
Input Pullup		
Maximum Position		
Mininum Position		
Engine Speed		
Injector Duty		
Lambda		
Mass Air Flow		
Manifold Air Pressure		
Throttle Position Sensor		
Renamable Items		
LCD Setup		
IO Configuration		
Output Testing		
Sate have how the autout is to be driven. I AW SIDE the autout will pull to RIMPOND when an UNCLI SIDE the autout will pull to VPAT when an UALE BRIDGE will	pull to PMIRGND when off and pull to VRAT when on Where there are A and R outputs	Allocation A and R to
Set mer now the output a to be unvert - tow sub- the output will put to event output will be utput will put to event of the sub- the output will put to be unvert of the sub- and the sub-	puil to Principul and puil to VBAT when on, where there are A and B outputs, a	socating A and b to

Supported CAN Streams

The following OEM CAN streams are supported, but check the Syvecs Forum for TinyDash firmware updates as more cars will be added.

		_													_
	M	AP	S	S	riven/Sport Mode)	orque Actual	orque Demand	CT	ь	DT	ear	ake P	beed	tG	Dago
	Ř	Σ	Ë	۲ä	9	Ĕ	ΙĔ	Ă	ЦЩ.	Ш	Ŭ	ā	S,	P	2
Audi Mk2 TTRS / RS3	√		V.	V.		√	V,		V.	√	√	√	✓	v	V
Audi Mk3 TTRS / RS3 / S3	✓	√	√	√	1	✓	√	✓	√	✓	√	✓	√	v	1
Audi R8 Gen1	✓		✓.	√		✓	✓.		√	✓	√	✓	✓	✓	1
Audi R8 Gen2	✓	√	✓.	√	✓	✓	√	✓	√	1	1	✓	✓	✓	1
BMW E46	✓		✓	√		✓	✓		✓	✓		✓	✓		
BMW E92	✓		1	1		1	1		1	1	1	1	1		
Corvette Z06	✓		✓	1		✓	1		1			✓	✓		
Evo X	✓	1	✓	1	1	1	1	✓	1	1	1	✓	1	✓	
ECUMASTER	\checkmark	1	✓	 ✓ 				✓							
Honda FD2/FN2	✓	1	1	1		✓	1		\checkmark			✓	✓		
Honda FK2/FK8	✓		1	1		1	1		1	1		✓	1	\checkmark	1
Infiniti Q60	✓		1	1	1	1	1		1		1	✓	1	1	1
Jeep 2022	✓		1	1	1	1	1				1	✓	1		
Lamborghini LP520	1		1	1		1	1		1	1	1	1	1	1	1
Lamborghini LP560	✓		1	1		1	1		1	1	1	1	1	1	1
Lamborghini Huracan	1	1	1	1	1	1	1	✓	1	1	1	1	1	1	1
Lamborghini Aventador	1	1	1	1	1	1	1	✓	1	1	1	1	1	1	1
LandRover Defender 90 110	1		1	1		1	1		1				1		
	1	1	1	1				√	1	1			1		
Mclaren 12c 650 675 570 600															
720 765 P1	1	1	1	1	1	1	1		1		1	1	1		
Mercedes Gen1 E55 C63	√	1		1	<u> </u>	· √	1		1		1	· •			
Moreodos Con2 C62 SIS		<u> </u>	1	1	1		1	1	1	1	· /		1		
Matac M1	•	1		· /	· /	-	-	•	-	•	·	•	•		-
Niccan 2707	•	-	•	·	•	•	1	•	• ✓	•	1	1	• -/	1	1
Nissan Datrol VC1	•	-	· /	· /	•	•	· /		· /	•	-	•	· /	•	
Nissan Patrol VC2	*		× /	×		V /	×		•	1	×	*	×	*	
Nissan Patrol Y62	*	×	×	× ×		×	V /		V /	V /	×	¥	V /	¥	×
NISSAN R35GTR	V	×	¥	×	×	~	×		×	v	×	v	V	¥	~
Porsche 991 / 981 / GTS /										1					
GI2RS/GI3	¥	V /	V /	V /	V /	V	V /	v	V /	V /	V /	V /	V	¥	*
Porsche 996	√	V	V	1	¥	v	V		¥	V	V	√	V		
Porsche 997/987	¥	▼	×	₩	¥	¥	V		₩ ×	V	▼	√	V	¥	¥
Simos 18	√	V	V	V	V	√	V	✓	V	✓	√	√	V	✓	-
Subura Impreza My15+	√	√	√	I ✓	√	√	I ✓		V.			√	√		-
Suzuki 2013+	v	1	√	ĺ ✓	_	√	V,		V.		<u> </u>	v	V		
Syvecs Ecu's	√	√	√	√	√	√	√	✓	√	√	1	✓	√	v	1
Toyota Yaris Gr	✓	√	✓	√	✓	✓	✓.		√	✓		✓	✓	✓	1
Toyota LandCruiser/Lexus LX570	✓	1	1	1		✓	1	✓	1			✓	✓		
Toyota GT86 /BRZ	✓			1		1	1		1	1		✓	✓		
VAG Me7	1		1	1		1	1		1	1	1	1	1	✓	1
VAG Me9	✓		1	1		✓	1		1	✓	1	✓	1	✓	1
VAG MED17	✓	1	1	1	1	✓	1	✓	1	✓	1	✓	✓	✓	1
VW Golf Mk5/6 Seat TFSI/TSI, Audi															
TSI/TFSI	✓		1	1		1	1		1	✓	1	✓	\checkmark	1	1
VW Golf Mk7 MQB Seat MQB Audi															
MQB	✓	1	1	1	1	✓	1	✓	1	✓	1	✓	✓	1	1
Yamaha YXZ	~		1	1		1	1		1		1		1		

The following After-market ECU CAN streams are supported, but check the Syvecs Forum for TinyDash firmware updates as more Ecus will be added.

	RPM	MAP	TPS	PPS	(Driven/Sport Mode)	Torque Actual	Torque Demand	ACT	ECT	EOT	Gear	Brake P	Speed	LatG	LongG
ECUMASTER	✓	1	✓	1				✓							
LINKECU	✓	1	✓	1				✓	✓	1			✓		
MoTeC M1	✓	1	✓	✓	1	✓	1	✓	1	1			✓		
Syvecs Ecu's	✓	1	1	1	1	<	1	✓	1	1	1	✓	✓	<	<