

### Quick set up guide:

The basemap supplied with the ECU is activated by grounding B135 pin 11. 75 ECUs are activated by grounding B135 pin 13. For flatshift, install a brake switch in the clutch pedal between ground and B136 pin 18.

[Pin Out](#)

[Video](#)

Abbreviations used: LC – launch control, FFS – Flat Foot Shift, TC – Torque Control, ALS – Anti Lag, EXIO – External I/O, ICV – Idle Control Valve

### Data log Parameters:

Code Name	Func'n	Size	Notes
Late Spark Angle	all	Single	Deg ATDC=x-65
ALS LC Flags	(all)	Single	
External IO Flags Inverted	EXIO	Single	Bitfield – see below
External IO Flags	EXIO	Single	Bitfield – see below
TC TIMER COUNT	TC	Single	Seconds = X/100
LC CENTRE RPM	LC	Double	Rpm = X*3.125
FS CENTRE RPM	FFS	Double	Rpm = X*3.125
LC Boost Target	LC/FFS	Single	Boost scale
LC Fuel Enrich	LC	Single	% = X*100/128
ALS Fuel Enrich	ALS	Single	% = X*100/128

### Function Enable Flag – Data Log Parameter ALS LC Flags

This function shows which functions are enabled after the switch mapping – monitoring this will confirm the switch settings etc. are working as expected. The value in the log is the sum of the functions which are enabled:

Bit	Value	Description
0	+1	Launch Control Enable (0 = Off, +1 = On)
1	+2	Flat Foot Shift Enable (0 = Off, +2 = On)
2	+4	Anti Lag System Enable (0 = Off, +4 = On)
3	+8	Clutch Switch Open (0 = Open, +8 = Closed)
4	+16	Reserved (not used should be 0)
5	+32	Reserved (not used should be 0)
6	+64	Reserved (not used should be 0)
7	+128	Reserved (not used should be 0)

### Switch Masks (values to be used in switch mask parameters)

These are values (in the decimal field) to be entered into switch masks to either enable, disable or select a feature on a switch. Most digital inputs are \*not\* available on the legacy TT ecu (4G/5G/87) but there are some spare analogue inputs (poss. Including EGT) that can be used

Bit	Decimal	Switch Link	ECUs
-	0	Function always disabled (not switch controlled)	ALL
0	1	Switch on user defined threshold (see EXIO_USER_BIT_ADDR and EXIO_USER_BIT_THRESH)	ALL
1	2	B135 Pin 1 (analogue input; IAT; switch to +5v, poss. invert)	STi only
2	4	B136 Pin 19 (analogue input; EGT; switch to ground)	STi/WRX
3	8	B135 Pin 12 (digital input; switch to ground)	
4	16	B135 Pin 11 (digital input; switch to ground)	UK/ WRX
5	32	B135 Pin 13 (digital input; switch to ground)	STi only
6	64	B136 Pin 18 (digital input; switch to ground)	ALL impreza
7	128	Function always enabled (not switch controlled)	

### Function switch enables

These are the function switch enables. These are dual maps and can have different values in different maps (e.g. always enabled in map one, switched in map two, for example). Set to 0 to disable, 128 to enable, or switch mask value to work on switch.

Description
LC switch mask
FS switch mask
ALS switch mask
Clutch switch mask
Switch masks invert. This should be zero to invert no switches. Add the fields in Switch Masks table to invert those fields. Example: 34 = 32+2 will invert bits 1 and 5

**Launch Control/Flat Foot Shift/Torque Control Parameter Definitions**

Size	Description
1D	Vehicle Speed Arm Threshold (vehicle speed units) – the value below which the vehicle will enter “launch control ARMED”
1D	Vehicle Speed Torque Control threshold – the value above which the vehicle will transition from ARMED to TORQUE CONTROL
1D	Launch Control MINIMUM engine speed – the lowest setting for the launch control engine speed
1D	Launch Control MAXIMUM engine speed – the highest setting for the launch control engine speed
1D	Percentage between minimum and maximum that the launch control engine speed defaults to. Can be overridden by serial link command
2D 1x8	LC Fuel enrichment, scale /128. Lookup vs. Launch RPM delta
2D 1x8	LC Fuel cut percentage, scale 100/255. Lookup vs. Launch RPM delta
2D 1x8	LC Late Spark percentage, scale 100/255. Lookup vs. Launch RPM delta
2D 1x8	TC RPM, scale (2500+31.25*x). Lookup vs. TC Timer
2D 1x8	TC Fuel enrichment, scale / 128. Lookup vs. TC RPM
2D 1x8	TC Fuel cut percentage, scale 100/255. Lookup vs. TC RPM
2D 1x8	TC Late Spark percentage, scale 100/55. Lookup vs. TC RPM
2D 1x8	FFS RPM, scale (2500+31.25*x). Lookup vs. Vehicle Speed X2
1D	LC late spark angle, when boost UNDER target. Angle-65 ATDC
1D	LC late spark angle, when boost OVER target. Angle-65 ATDC
1D	FFS late spark angle, when boost UNDER target. Angle-65 ATDC
1D	FFS late spark angle, when boost OVER target. Angle-65 ATDC
1D	TC late spark angle, when boost UNDER target. Angle-65 ATDC
1D	TC late spark angle, when boost OVER target. Angle-65 ATDC
1D	LC Launch boost target, in boost units
1D	TC/FFS boost delta from nominal boost target, in boost units

**ALS Parameter Definitions**

Size	Description
2D 1x8	First axis for 3D ALS tables
2D 1x8	Second axis for 3D ALS tables
3D 8x8	Fuel Cut Table (% , 100/255)
3D 8x8	Late Spark Table (% , 100/255)
2D 1x16	Spark Angle Table (65-X deg ATDC)
2D 1x16	ALS Fuel Enrichment (scale /128)
1D	ALS ICV Duty override. Values between 0-1023. Anything higher will disable ICV duty override and retain normal ICV operation during ALS.