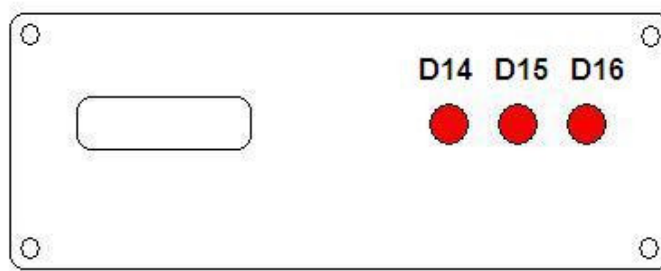


MS1-Extra and MS2-Extra

On the front of the MegaSquirt ECU there are 3 LED's. These are more often than not used by the software as drivers for Spark Outputs and maybe other options like shift Lights, etc. The left LED (**D14**) is always used as the **Spark A** output, so if you have an EDIS on an MS1-Extra (not EDIS on MS2), a distributor based setup or any setup with one or more spark outputs then D14 will be assigned for use as **Spark A** output. This means it can **NOT** be used or set to any other function as the spark output will stop working as it is designed to.



The next LED (**D15**) is usually set as default to "**Warmup**", this means it will light up once the engines has started and if the engine coolant temperature is lower than approx 71C. If using MS1-Extra this can be set to "**IRQ**" which is used to set up distributors, etc. See [HERE](#) for more on that. If you have three or more Spark outputs (e.g. 6cy wasted) then this will be set to **Spark C** and you will not have any LED's anyhow, as the space will be used for a db15 connector to get the spark outputs from inside the ECU.

If using an MS2-Extra ECU then this LED can be set for use as a Tacho Output or a Programmable Output. I usually use JS11 in MS2 for the tacho output, but **D15** is my preferred driver for the **Programmable Output** option for MS2, as you can then see when the output is switched on when the LED lights up.

Lastly is the right side LED (**D16**). This is used to indicate "**Acceleration Enrichment**" is in use on a single spark output ECU. On an ECU which has more than one spark output (e.g. zetec, 4cy wasted, etc) this LED is used to drive the **Spark B** output, so it wont indicate anything except that the spark output has fired. Again, do NOT set this to be used for anything other than **Spark B** when more than one spark output is being used.

MS1-Extra
Basic Settings -- Codebase and Output functions

Cycle power after changes(F1=HELP)

Choose one code type

Distributor (MSnS) MSnS

Neon/420A decoder Off

Wheel decoder (e.g. 36-1) Off

EDIS Off

EDIS multispark Off

TFI ignition Off

HEI Ignition Off

Choose input/output pins to use

FIDLE function Idle control

LED17(D14) function Spark output A

LED18(D15) function Warmup

LED19(D16) function Acceleration

Multiplex ignition? Normal

X2 (JS0) function Water inj

X4 (JS2) function Output1

output3/Spark D Output3

pin10 shift / Spark E Shiftlight

knock in / Spark F Knock input

F1 Fetch From ECU Burn To ECU Close

MS2-Extra will automatically define **D16** as **Spark B** when set to wasted on any engine with more than 2cy and **D15** as **Spark C** automatically when you select wasted spark on anything over a 4cy. **Spark A output pin (D14)** is used on all [ExtraEFI](http://www.ExtraEFI.co.uk) spark setups *except EDIS for MS2*, so ensure its set to **D14** (*Except for EDIS on an MS2-Extra, JS10 is used for the EDIS output on MS2-Extra*)

Ignition Options

General Ignition

Spark mode(dizzy, EDIS, wheel) Toothed wheel

Trigger Angle/Offset (deg) 0.00

Angle between main and return (deg) 50.0

Oddfire small angle 90

GM HEI/DIS options Off

Skip Pulses 3

Ignition Input Capture Rising Edge

Spark Output Going High (Invert)

Number of coils Wasted spark

Spark A output pin (D14) D14

F1 Fetch From ECU Burn To ECU Close