Controller Card Software Installation & Setup Manual v1.2

THE CARD

We have developed this card to try to simplify the connections and calibration of our TQ.
Your new TQ has been 'Factory Calibrated' and Tested.

The card requires an external 12vdc power supply in order to function, control the Parking Brake Light and to manage the output to the Backlighting (if fitted). You will also require a spare USB socket on your PC system.

CONTENTS

Please read this manual before attempting to install or calibrate your new TQ.   It will help you understand the principles and method used to get ultimate performance from your new TQ.

Your new TQ will have been 'Factory Calibrated' and the values stored for a truly 'Plug & Play' Experience.

Once calibrated in house, your new TQ will have been Factory Tested to check operation and calibration of all Axes & Functions.

With the calibration values saved at the Factory, there is no need for you to calibrate in Windows or use any third party module such as FSUIPC.

In the unlikely event that you need to Reset any axis, we have included in the software package a Calibration Utility.
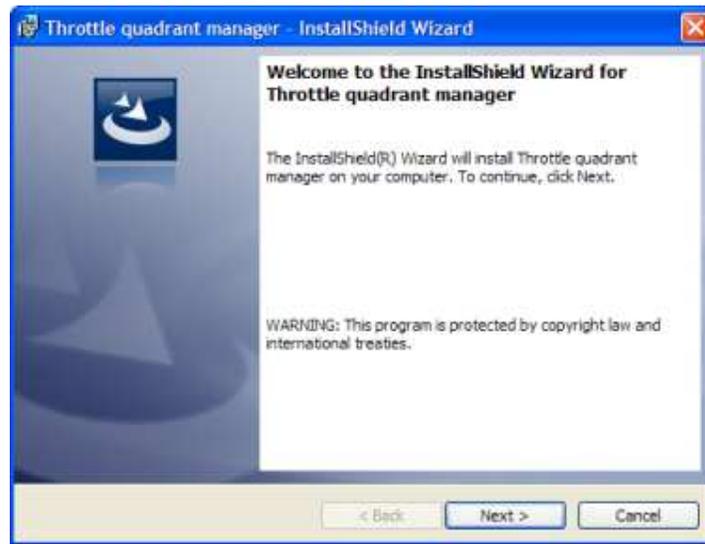
If you do decide that re-calibration is required, please follow the proceedures laid out in this manual.

The Revolution Simproducts Team.

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SOFTWARE INSTALLATION

Once you have downloaded the Installation program, run SETUP to start the installation.

Please follow the on-screen instructions to install the program. When given the option to choose a destination folder, we recommend that you accept the default so that the Revolution Simproducts programming is placed in your Program Files Folder.

Once the installation is complete, navigate to the Revolution Simproducts folder that will have been installed in your Program Files Folder. In the Revolution Simproducts folder, you will see the Throttle Quadrant Manager has been installed. Please open this folder and you will see the different execute files included.

Your new TQ will have been 'Factory Calibrated' and the values stored. But in the unlikely event that you encounter a problem with any axis, the software installation includes a utility to allow re-calibration of any axis.

We suggest that you create a shortcut onto your desktop for both the Calibration and the Reset Card .exe files at this time.

Calibration is done in the RevSim Card Calibration Pages. There is no need to calibrate in Windows. Everything is taken care of in our Calibration Manager. There is also no need to use third party modules such as FSUIPC.

Before calibrating your card, please make sure that you have a 12vdc supply to your TQ and that the card's USB lead is attached to a spare USB socket on your PC.

Once everything is connected, you may now open the R-sim throttle quadrant Calibration.exe file and the HID Configuration Interface Page will open.

On this page you will be able to check operation of the axes and buttons before use and re-calibrate any axis should the need arise.
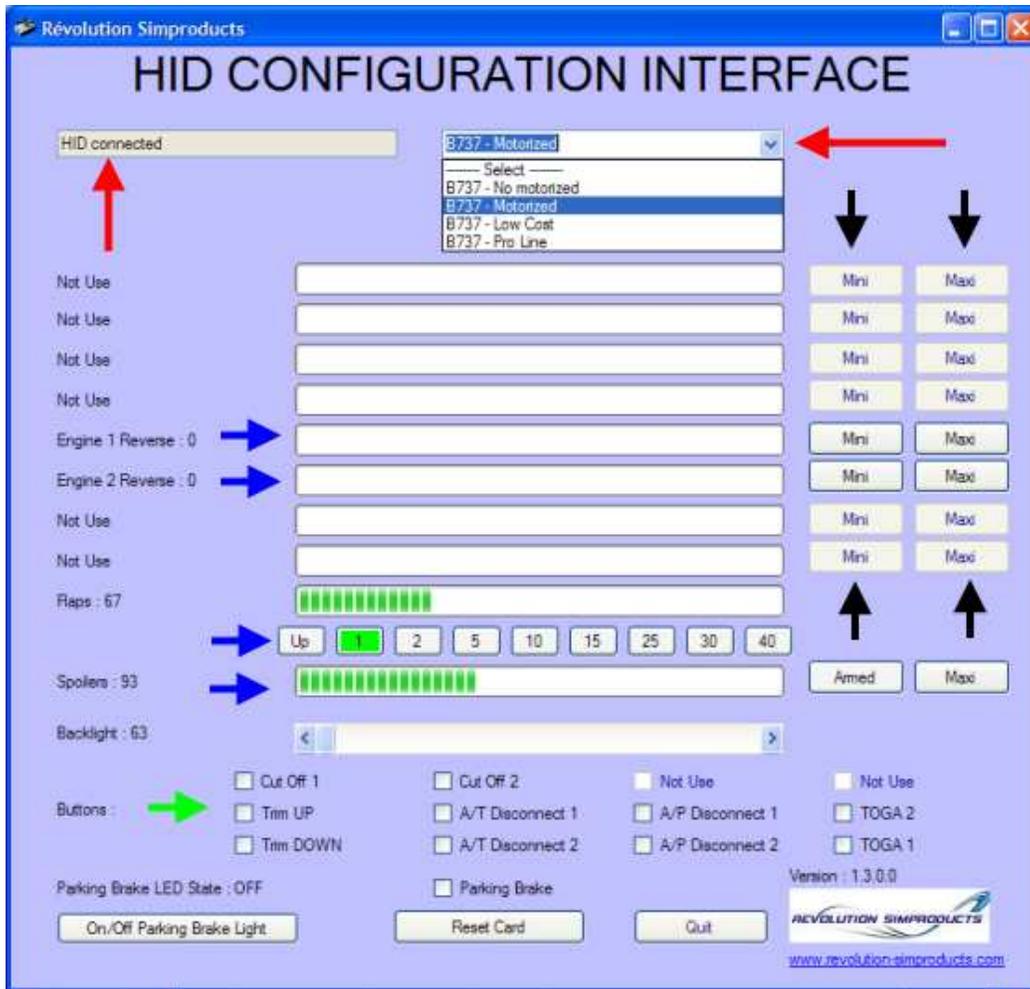
UNDERSTANDING THE CONFIGURATION PAGE

If all connections are good and the card is being seen, then in the top left box, you will see the message 'HID connected'.

In the right hand box, please select from the dropdown menu which type of TQ you have attached. In our example we have chosen the B737 – Motorised. When you make your choice here, the axes you need for calibration are automatically loaded.

If you are unsure as to which TQ to select, Please Contact Us

The centre boxes contain the axis indicator boxes. As you move an axis, it's value will be displayed in the corresponding indicator box as shown here & the Flaps and Spoiler Boxes.

Below the indicator boxes are the Button Indicators. When a button is pressed, a tick will appear in the corresponding box and when the button is released the box will return to an empty state.

At the bottom of the page you may check the Parking Brake Indicator, you may reset the card to a default state or you may Quit the Configuration Program altogether.

And finally on the right side of the page are the Mini and Maxi buttons where you set the range of each axis we are using.

FUNCTIONS

Here's the table showing what functions are used on the Revolution Simproducts Controller for each type of Throttle Quadrant.   Functions used with our card are coloured Yellow.
So for example, a Non Motorised TQ uses the Throttle 1 & 2, Reverser 1 & 2, Spoiler & the Flaps Input onto the card.   Or, a Motorised 1 TQ will use the Reversers, Flaps & Spoiler etc.
If you are unsure which type of TQ that you need to select, please contact us.

|	Gaz 1	Gaz 2	Gaz 3	Gaz 4	Reverse 1	Reverse 2	Reverse 3	reverse 4	spoiler	flaps
No motorized										
Motorised 1										
Motorised 2										
Pro Line										

CHECK THE BUTTON INPUTS

First, please check that all button inputs are being seen, a total of 10 buttons. When a button is pressed, a tick will appear in the corresponding box and when it is released, the box will return to an empty state.
Please remember for the card to see the Trim Up and Trim Down buttons, you will need to turn the left hand switch in the hardware STAB TRIM panel into it's down position.

CALIBRATING THE AXES

Customers with a Non-Motorised TQ will have to calibrate both throttle inputs in addition to the Reversers, Spoiler & Flaps.   Customers with any version of the Motorised TQ can skip this part and go straight to the section on the REVERSERS.

For Customers With a Non-Motorised TQ Only
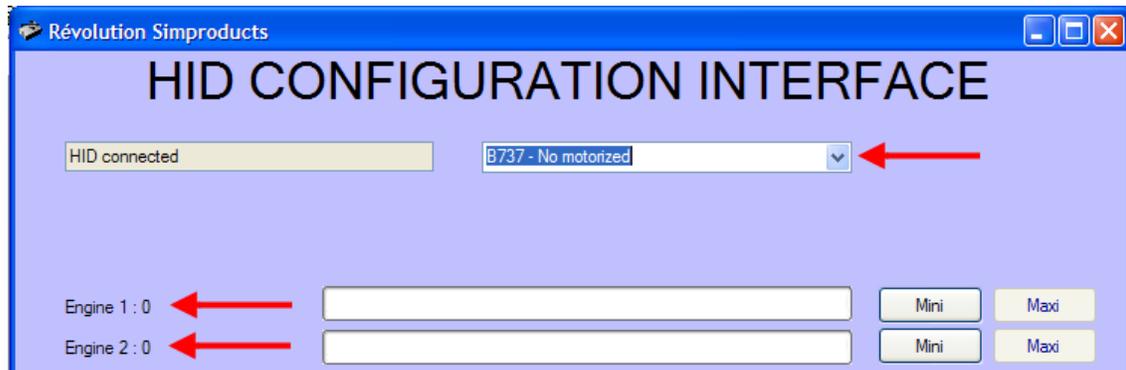
When you make your TQ selection in the HID Interface dropdown menu, you will select B737 No Motorised.   Doing this will make the Engine 1 and Engine 2 Throttle calibration routines available.

To Calibrate a Throttle Lever potentiometer (in our example Throttle 1), move the lever to it's idle position and click the Mini button.

Move the lever to it's other extreme. You will see the value in the indicator box has increased. Now click the Maxi button to record the range of the potentiometer.   The Engine 2 Throttle calibrates in exactly the same way.

REVERSER 1.   Raise the Reverse Lever Knob about 15mm from it's down position. This to ensure we return to a Zero Value when the Lever is down. Click the Mini button alongside the Reverser 1 Indicator Box. See also the note at the end of this document on Reversers.

Not Use		Mini	Maxi
Engine 1 Reverse : 0		Mini	Maxi
Engine 2 Reverse : 0		Mini	Maxi
Not Use		Mini	Maxi

Move the lever to it's fully up position. You will see that the indicator bar has now filled the box. Now click the Maxi button alongside the Reverser 1 Indicator box.

Not Use		Mini	Maxi
Engine 1 Reverse : 253	▌▌▌▌▌▌▌▌▌▌▌▌▌▌▌▌▌▌▌▌	Mini	Maxi
Engine 2 Reverse : 0		Mini	Ma
Not Use		Mini	Max

That's the Reverser 1 calibrated, now let's do the Reverser 2.

REVERSER 2.   Raise the Reverse Lever Knob about 15mm from it's down position, This to ensure we return to a Zero Value when the Lever is down. Click the Mini button alongside the Reverser 2 Indicator Box.   See also the note at the end of this document on Reversers.

Not Use		Mini	Maxi
Engine 1 Reverse : 0		Mini	Maxi
Engine 2 Reverse : 0		Mini	Maxi
Not Use		Mini	Maxi

Move the lever to it's fully up position. You will see that the indicator bar has now filled the box. Now click the Maxi button alongside the Reverser 2 Indicator box.

Not Use		Mini	Maxi
Engine 1 Reverse : 0		Mini	Maxi
Engine 2 Reverse : 255	▌▌▌▌▌▌▌▌▌▌▌▌▌▌▌▌▌▌▌▌	Mini	Maxi
Not Use		Mini	Ma

Ok, that's Reverser 2 calibrated, now let's do the Spoiler

SPOILER.   Place the Spoiler Lever in the Armed position. You will see that the value in the indicator box is showing a partial fill of the box. Click the button in the Configuration Interface window with the legend Armed.   Once the Armed position has been registered, the Armed Button will turn green.

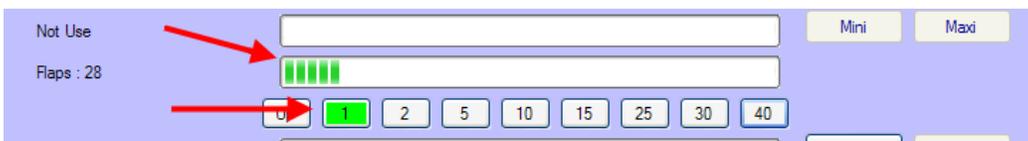| Flaps : 0										
	Up	1	2	5	10	15	25	30	40	
Spoilers : 48	▌▌▌▌▌▌							Armed	Maxi	
Backlight : 64	◄ ▌							►		

Now move the Spoiler Lever to it fully up position.   See the indicator bar has now filled the box. Click the Maxi button to register the fully up position.
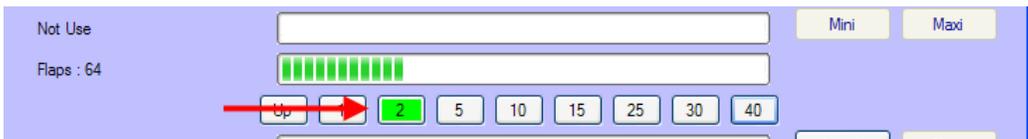
FLAPS. Place the Flaps Lever in the UP position. Click the button in the Configuration Interface window in the Flaps section that says Up.
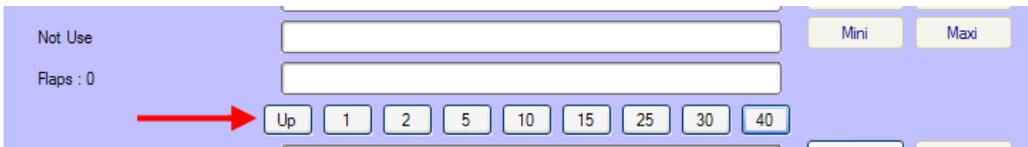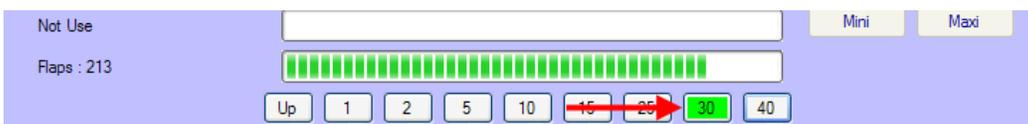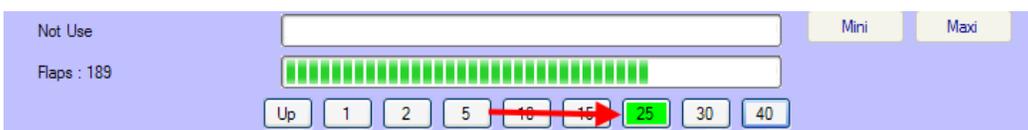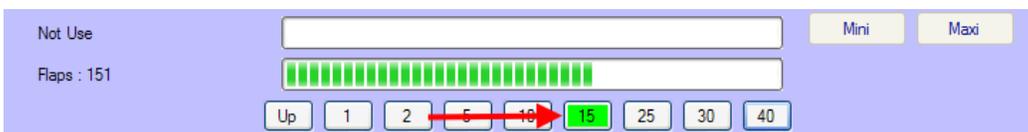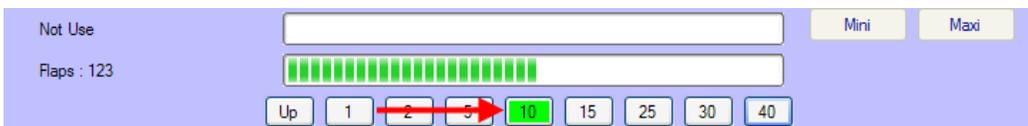

Move the Lever to the Flaps 1 position. You will see a value registered by a partial fill of the indicator box. This time click the button that says 1.
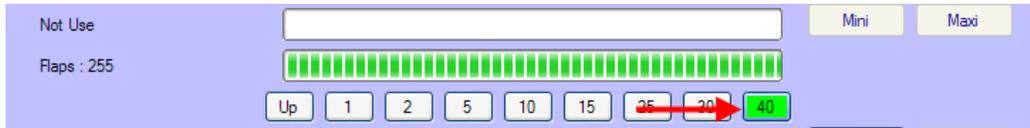

Move the lever to the Flaps 2 position, now click the button that says 2.

Repeat for each Flaps position always clicking the button that has the same value as the Flaps position selected.

CHECKING YOUR CALIBRATION

Once calibration is complete, you may now check operation of the axes by looking at the values in the indicator boxes as you move the axis.

As you move the Spoiler axis, when passing the position registered as the Armed position, the Armed button will flash Green.

As you move the Flaps axis, when passing each position registered as a Flaps position, the corresponding Flaps button will flash Green.

ERRORS.

It is important to follow the sequence of calibration settings as above.   It is only possible to set each axis calibration once. Attempting to set, then reset an axis calibration may result in an Error Message.
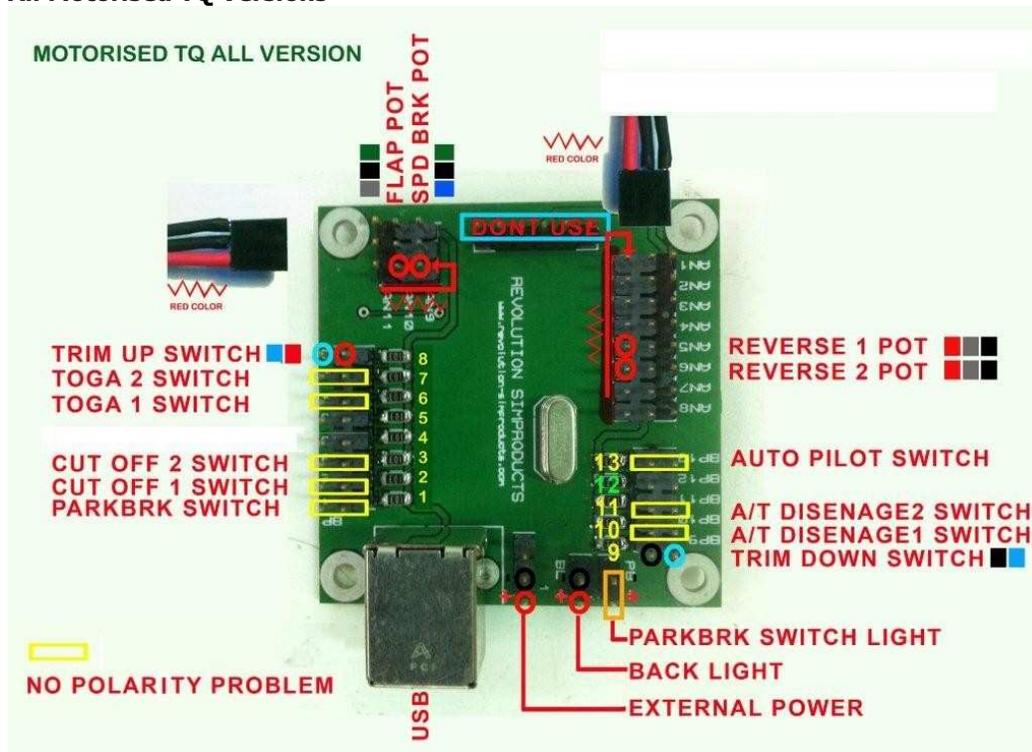
Should you receive an Error Message, you will need to Reset the Card to a Default State and start again with the calibration.

CONNECTIONS TO THE CARD

Non Motorised Standard TQ
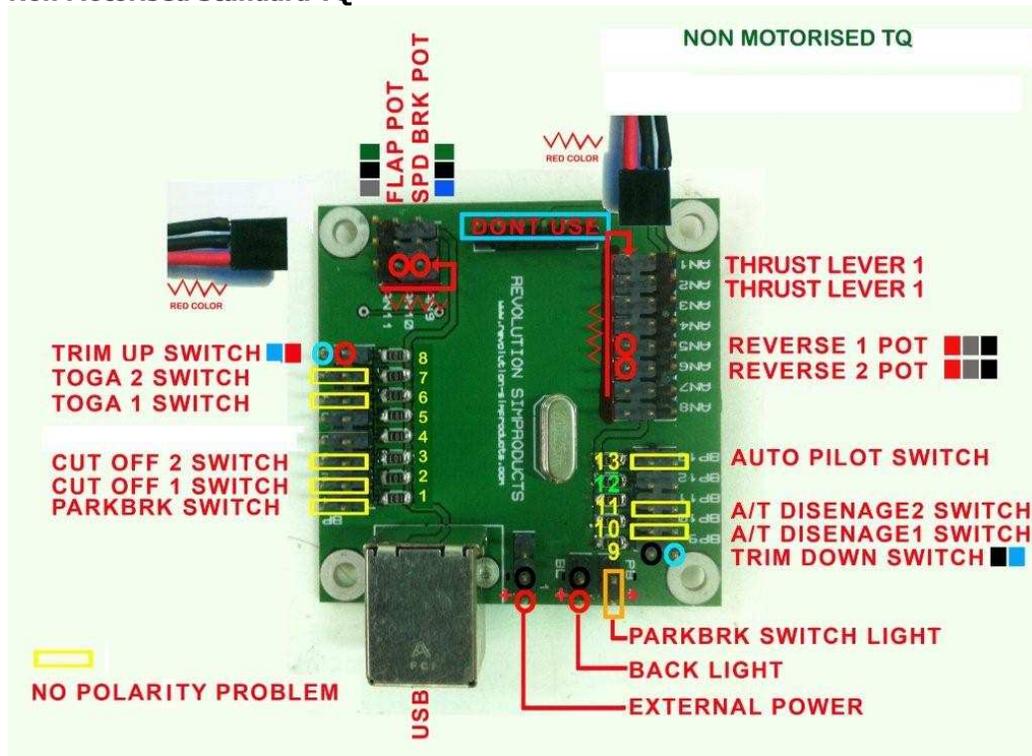
All Motorised TQ Versions

12vdc Input The 12vdc Input (External Power) to the Card is Polarity Sensitive.   The PCB is marked which pin is + (positive) shown in the diagram with the **red circle**.

NOTES:

Backlight Output   The Backlight Output which is marked BL is again Polarity Sensitive. The PCB is marked which pin is + (positive) shown in the diagram with the **red circle**.

Parking Brake Light The Parking Brake Light Output which is marked PB has a + & - output. However, the Parking Brake Lamp is NOT Polarity sensitive, so it is not important which way round it is connected.

Switch Connections   All Switch Connections are by way of 2 way header pins having standard 2.54mm pitch onto the Card.   Each switch input has a number prefixed by the letters BP.   Switches are connected to the inputs shown in the above diagram. It is not important which way round the switch wires are connected to the card as these are sensing continuity and not polarity. Marked on the diagram with a yellow box.

PARK BRAKE SWITCH = BP1
CUTOFF 1 SWITCH = BP2
CUTOFF 2 SWITCH = BP3
TOGA 1 SWITCH = BP6
TOGA 2 SWITCH = BP7
TRIM UP SWITCH = BP8
TRIM DOWN SWITCH = BP9
A/T DISENGAGE 1 SWITCH = BP10
A/T DISENGAGE 2 SWITCH = BP11
AUTOPILOT SWITCH = BP13

Note On Trim Up/Down Switches.   The two trim switches share a common GND connection.   You will notice that on the diagram, the two inputs have different colours yet they are accompanied by a common coloured GND connection.

AXES Inputs All axes inputs to the card are by way of 3 way header pins again having a standard pitch of 2.54mm.   All axes inputs have a letter prefix of AN.
It is important that you understand which pin should be connected to the Wiper (Variable) on the potentiometer.   ALL VARIABLE INPUTS are the inside pin which faces the centre of the card as you will see from the diagram. The variable inputs are marked on the diagram with a **RED CIRCLE** and a **RED SLEEVE** on the Plug.   The remaining pins are for the + & GND connections to the potentiometer.

THRUST LEVER 1 = AN1   **** For Non Motorised Only**
THRUST LEVER 2 = AN2   **** For Non Motorised Only**

All Motorised TQ Thrust Lever Potentiometers are connected to the second card

REVERSE 1 = AN5
REVERSE 2 = AN6
SPOILER = AN10
FLAPS = AN11

REVERSERS
Switching back from Reverse Thrust to Normal Idle occurs at only one point on the Reverse Potentiometer when it's value is absolute zero. All potentiometers have a +/- tolerance, so to ensure we return to a zero value when the Reverse Lever is in it's down position, we set the Mini point with the pot slightly advanced on it's travel, hence raising the lever slightly to set the Mini value.

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