

PROGRAMING THE FOUR DISPLAY UNITS CONNECTED TO A POKEYS CARD.

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This guide walks you through the steps needed to get the buttons and encoders on the display units that are wired to a Pokeys card programmed to work in your Lear45 simulator.

First you must correctly wire the buttons to the card. This is a simple procedure once you have identified the individual wires attached to the DUs. To do this connect the black lead of a multimeter to the ground wire (usually black) and then connect the red lead to each of the other wires in turn – pressing each button until you get a signal on the meter showing continuity. Note the color of that wire and what button or encoder it is connected to.

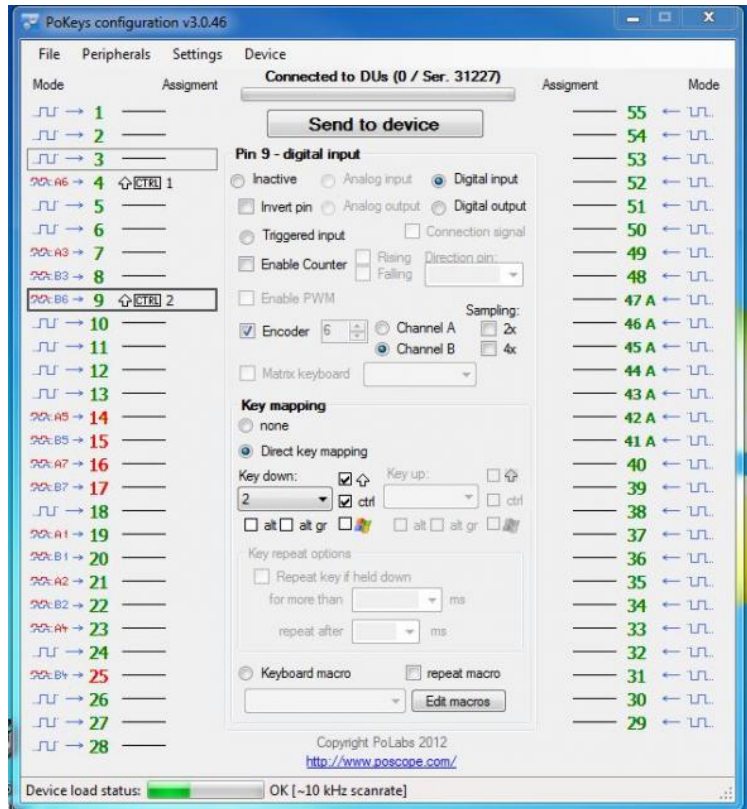
Connect the ground wire to one of the ground terminals on the Pokey card and connect the other wires to any of the other terminals (except pin 54 as this will cause the card to go into recovery mode). If you have a full complement of DUs then you will need two Pokeys cards as one cannot accommodate all the buttons and encoders.

I have included a table at the end of this document that list all the button and encoder settings as a quick reference.

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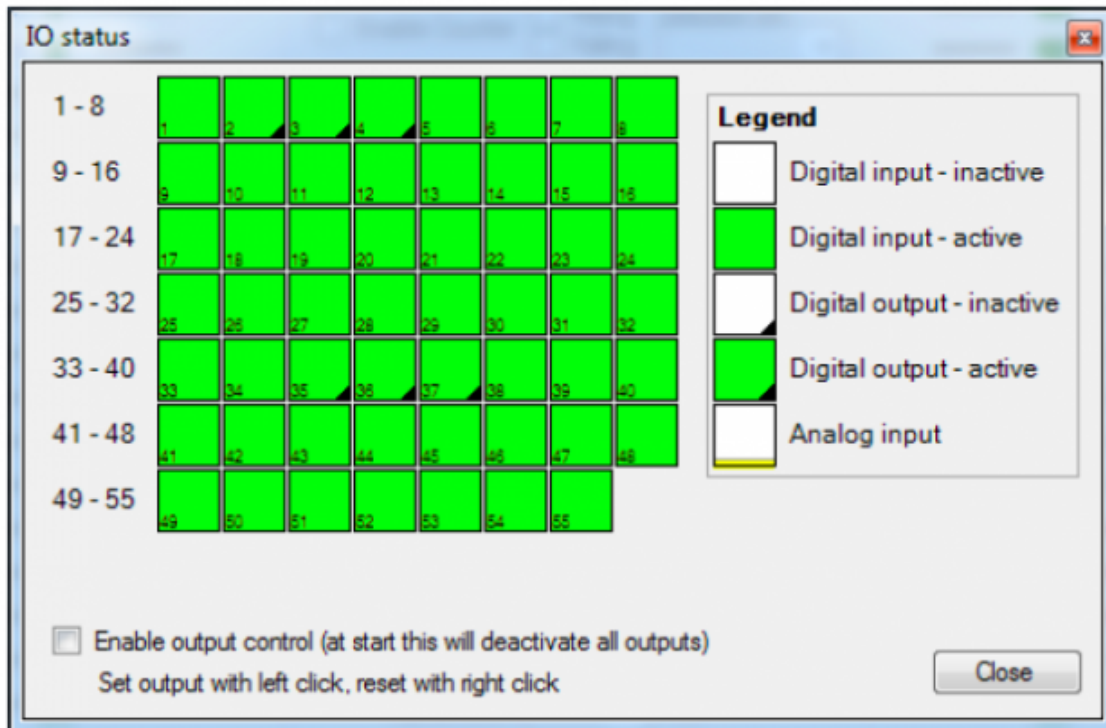
Okay on to programming. Let's use the EICAS as an example as it has six buttons and one encoder.

Open up the Pokeys console and set all the inputs to Digital Input by selecting each one in turn and checking the **Digital Input** radio button.



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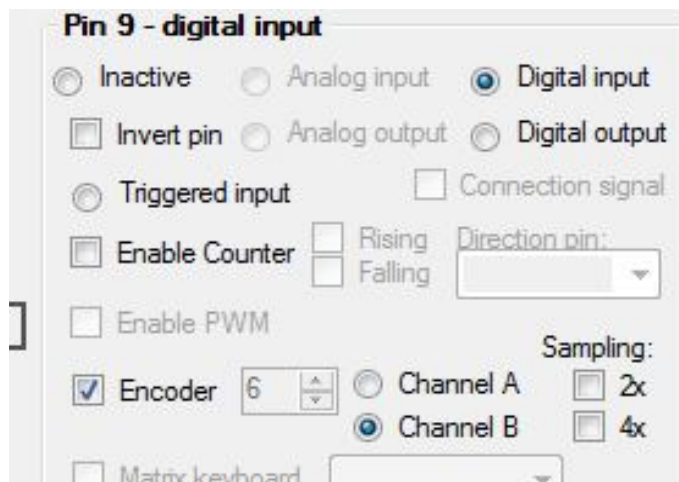
Next click on **Peripherals** and then **Digital Inputs**. This screen will appear.



Press each button on the EICAS bezel in turn and note which box turns from green to white. Note the pin number for each button. Do the same for the encoder – turn clockwise and then turn counter clockwise (there will be two pins – one for each direction). To ensure that your encoder is being recognized, click on **Peripherals** and then **Encoder Raw Values**. When you turn the encoder you should see values changing in the two boxes next to **Encoder 1**. This shows that your encoder is wired correctly and is working.

PROGRAMMING THE ENCODER

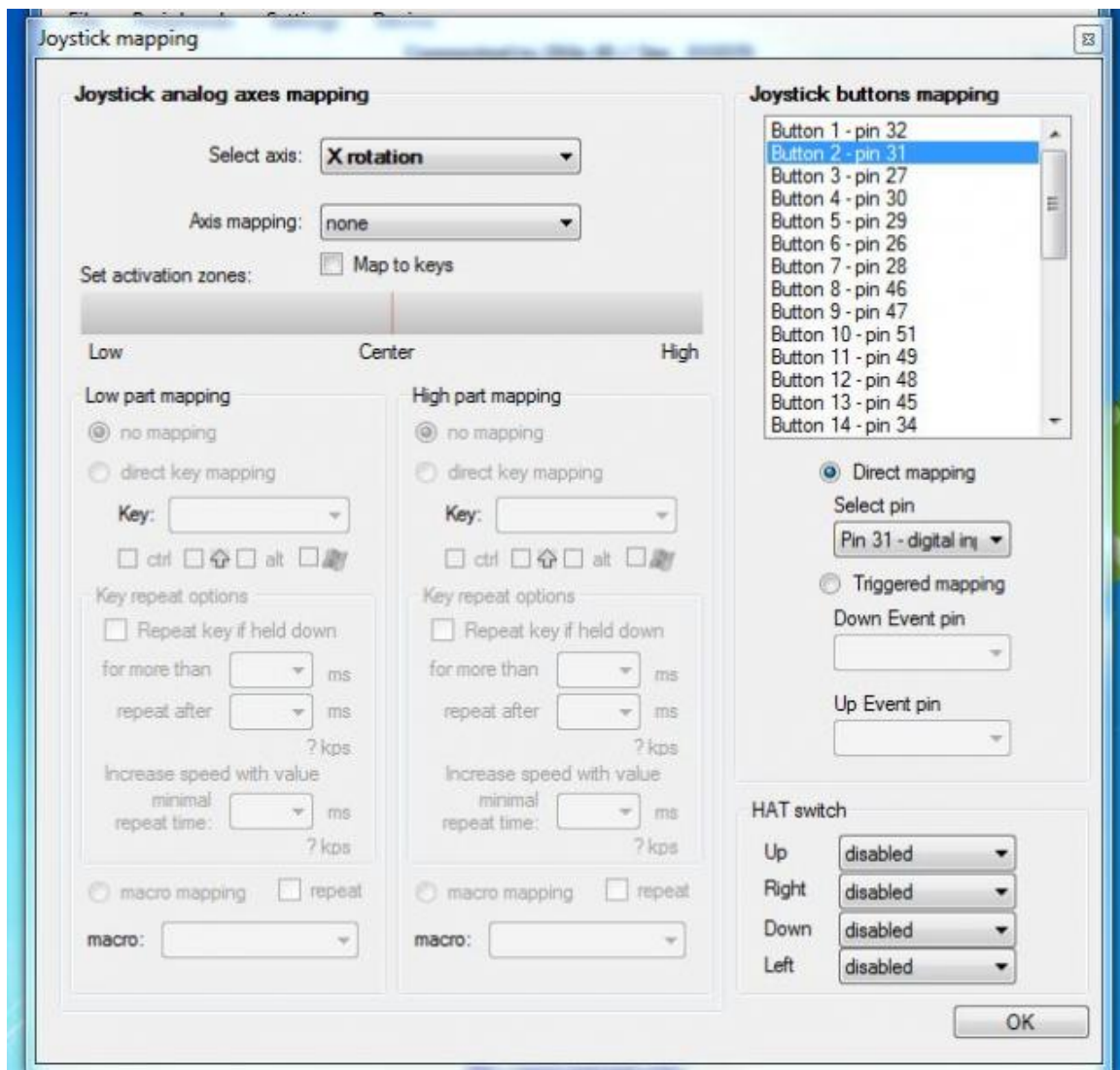
Close this screen to go back to the main screen. Highlight the first pin to which the encoder is connected and check the **Encoder** box and make sure that the #1 is shown in the box to the right (if this is the first time you are programming the Pokey card it should show #1 (in the illustration below I am programming encoder number six second connection attached to pin #9)).



The radio button beside **Channel A** should be active. Sometimes it may show Channel B if you select the pin that the other encoder wire is connected to. Also sometimes the Pokey software will automatically put channel B on the second pin because it recognizes that an encoder is attached. Just make sure that channel A and channel B are configured the same and they have the same Encoder number. Check the **2X Sampling** box.

Now highlight the second pin that the encoder is connected to. Do the same as before but now the radio button beside **Channel B** should be active. Click on the **Send to Device** button at the top of the screen. You have now programmed the encoder.

We now need to set the two encoder outputs from the Pokey card as Joystick buttons so that FSUIPC can recognize them as such. Click on **Peripherals** and then **Joystick Mapping**. This screen will appear.

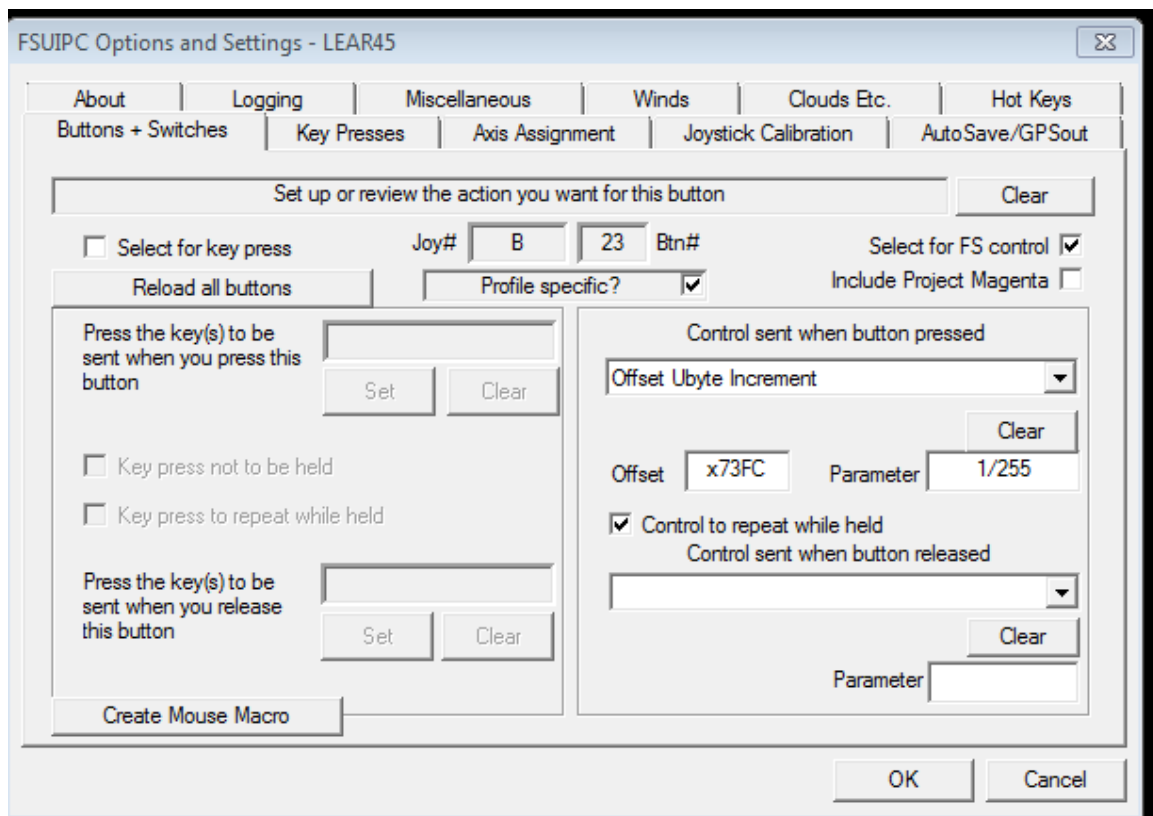


From the list on the right hand side, highlight **Button 1**, then under **Direct Mapping** below that list, select the first pin that your encoder is wired to. Do the same for **Button 2** and select the second pin your encoder is wired to. Click **Okay** and then **Send to Device**.

Before we proceed to programming the buttons let's go into FSX and set up the encoder. Open up **FSX** and then open up the **FSUIPC** window and click on **Buttons + Switches**. The window shown below will open. If you are setting up FSUIPC for a specific aircraft check the **Profile Specific?** box. The first time you do this you will be prompted for the name of the aircraft. As you can see I have mine set to Lear45.

Now turn the encoder clockwise, and you should see a **Joystick** number and **Button** number appear in the two boxes at the top (mine shows Joy#B and Btn# 23). Check the **Select for FS control** box. In the **Control sent when button pressed** box, select **Offset Ubyte Increment** from the list. In the Offset box enter **x73FC**. In the **Parameter** box enter **1/255** and check the **Controls to repeat while held** box.

Now turn the encoder counter-clockwise and after it's recognized go through the same procedure as you did before but this time select **Offset Ubyte Decrement**. Click **Okay** and you are done. When you check the function of your encoder and you find that it's working in reverse, go back through the above procedure and reverse the Offset **Ubyte Increment** and **Decrement**.

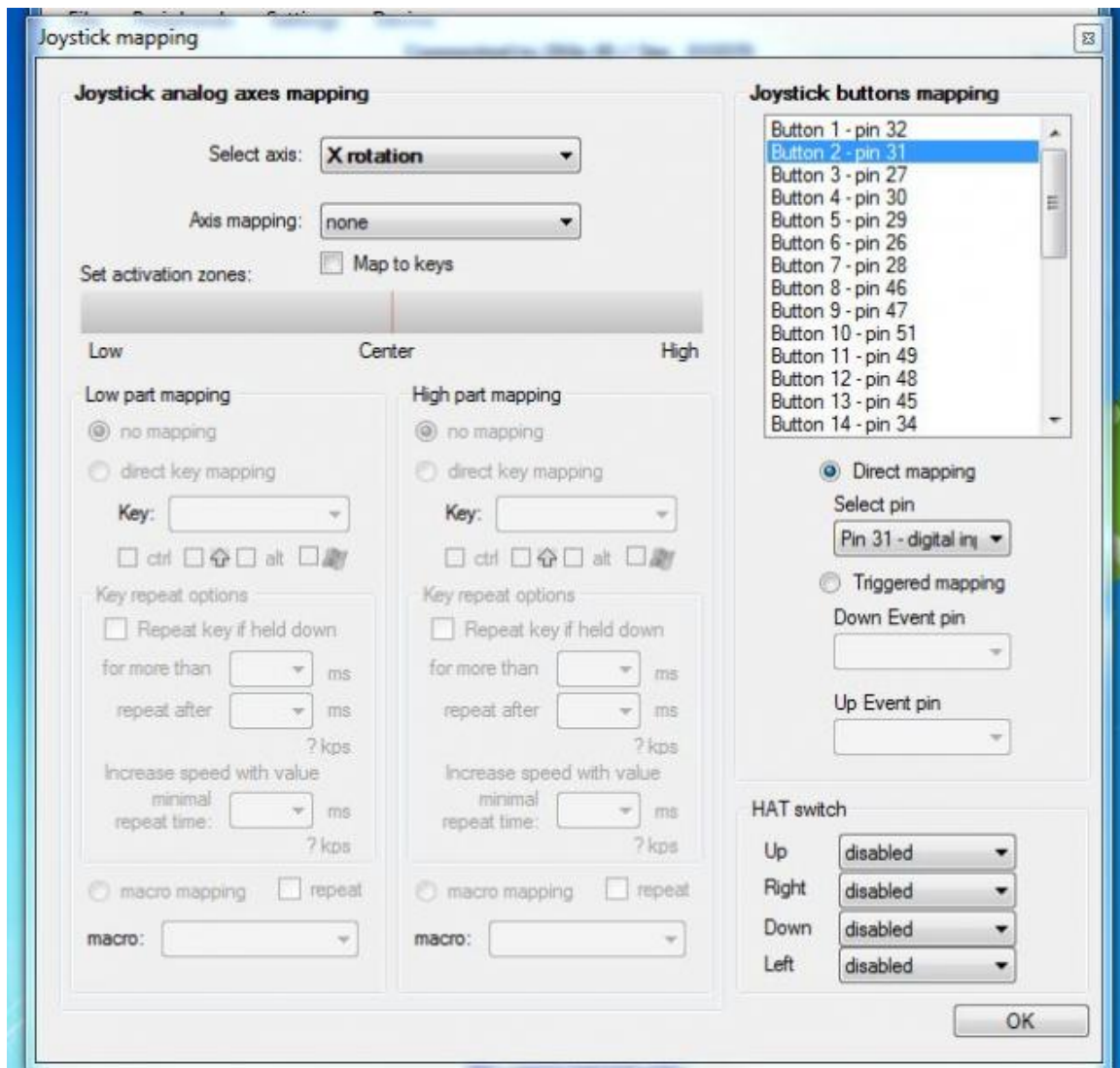


PROGRAMMING THE ENCODER FOR THE MFD

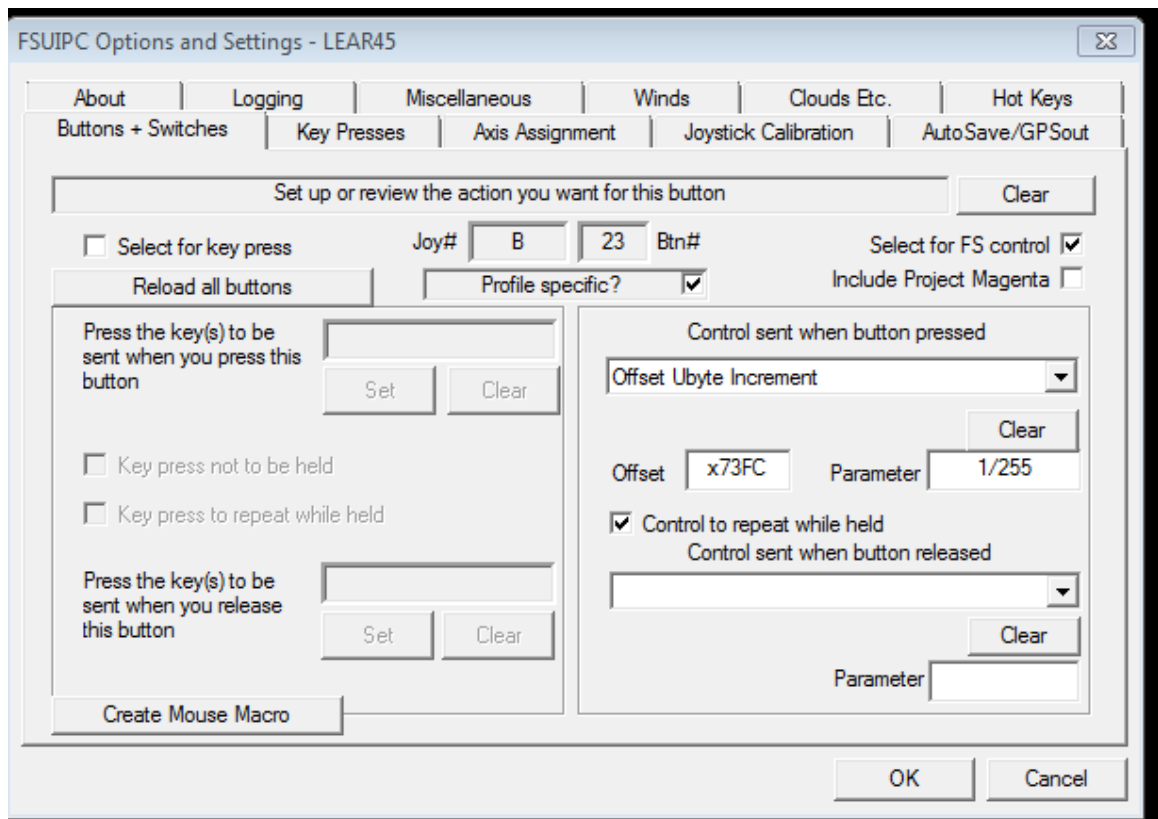
To program the MFD go through the same procedure but use offset **73FD** and the same parameters. You can check the encoder function by watching the map ranges while slowly turning the encoder. The values should change from 2.5, 5, 12.5, 25, 50, 100, 150, 250, and 500nm .

PROGRAMMING THE EICAS BUTTONS

You should have your list of buttons from the previous session where you identified which button is connected to which pin. Open up the Pokey console again and click on **Peripherals** and then **Joystick Mapping**. This screen will appear. Same procedure as you did before. Highlight Button 3 and select the pin number that your first button is connected to which will be the **SUMRY** button. Do the same for buttons 3 through 6 (**ELECT**, **HYD**, **ECS**, **FLT** and **FUEL**). Click on **Save** and **Send to device**.



Open up **FSX** and then open up the **FSUIPC** window and click on **Buttons + Switches**. This window will open. If you are setting up FSUIPC for a specific aircraft check the **Profile Specific?** box.



Now press the **SUMRY** button on the EICAS bezel, and you should see a **Joystick** number and **Button** number appear in the two boxes at the top. Check the **Select for FS control** box. In the **Control sent when button pressed** box, select **Offset Setbit**. In the Offset box enter **73F8** and the parameters listed in the following table.

SUMRY	x01
ELECT	x02
HYD	x04
ELS	x08
FLT	x10
FUEL	x20

Now in the **Control sent when button released** box, select **Offset Clrbit**. In the Offset box enter **73F8** and the parameters listed in the above table. **DO NOT** check the **Controls to repeat while held** box.

Click **OKAY** and your buttons are now programmed. Check their operation by pressing each one in turn.

PROGRAMMING THE MFD BUTTONS

For the MFD you can use the same procedure and use Offset **73F9** with the parameters from the following table.

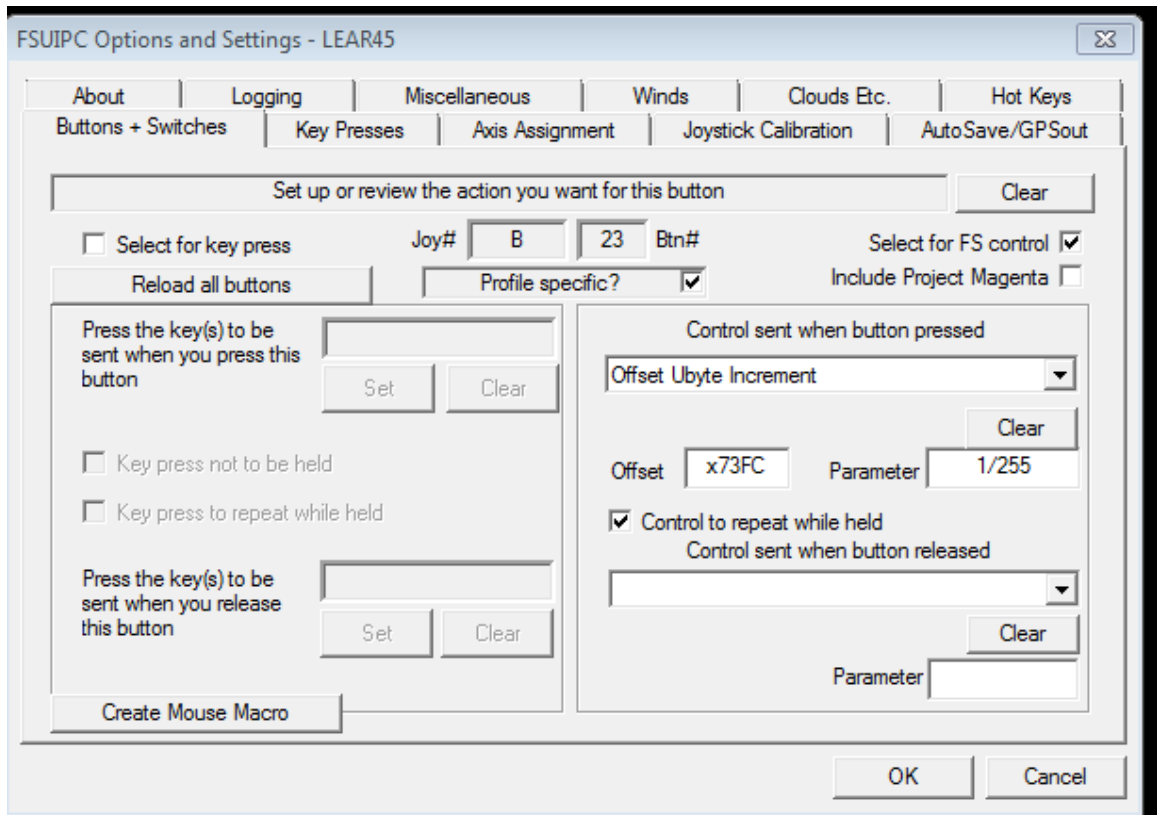
SYS	x01
MFD	x02
CKLST	x04
TCAS	x08
WX/TERR	x10
MAP PLAN	x20

PROGRAMMING THE PFD BUTTONS & ENCODERS

The procedure for programming the two buttons on the pilot and first officer PFD are similar. Once you have your buttons wired to the Pokey card and set the encoders as before, assign a joystick button number to each pin to which they are connected.

PFD BUTTONS

Open up FSX and then open up the FSUIPC window and click on **Buttons + Switches**. This window will open. If you are setting up FSUIPC for a specific aircraft check the **Profile Specific?** box.



For the Offset and parameters for the **RA/BARO** and **STD** buttons use these settings.

BUTTON	OFFSET	PARAMETER	OFFSET TYPE
PILOT RA/BARO	73D5	x40	Setbit/Clrbit
PILOT STD	0330	16211	Setbit/Clrbit
FO RA/BARO	73D5	x40	Setbit/Clrbit
FO STD	0330	16211	Setbit/Clrbit

PFD ENCODERS

Once you have your encoders wired to the Pokey card, go through the same procedure as before:

1. Identify each of the two pin combinations that the two encoders are wired to.
2. Make sure that **Digital Input** box is checked for each of the pins.
3. Highlight the first of the two pins for each encoder.
4. Check the **Encoder** box.
5. Increment the **Encoder #** to the next one in sequence using the up arrows in the adjacent box.
6. See if **Channel A** is active and check the **4X Sampling** box.
7. Do the same for channel B.
8. Click on **Send to device**.

MINIMUMS ENCODER

As before Open up FSX and then open up the FSUIPC window and click on **Buttons + Switches**. Again, if you are setting up FSUIPC for a specific aircraft check the **Aircraft Specific?** box.

Now turn the **MINIMUMS** encoder on the PFD bezel clockwise, and the **Joystick** number and **Button** number appear in the two boxes at the top. Check the **Select for FS control** box. In the **Control sent when button pressed** box, select **Offset Ubyte Increment** from the list and in the **Offset** box enter the following information.

Do the same except turn the encoder to counter clockwise and use **Offset Ubyte Decrement** and enter the same offset and parameters. Check the **Controls to repeat while held** box. Click **Okay** and you are done.

ENCODER	OFFSET	PARAMETER
PILOT MINIMUMS	73D2	1/255
FO MINIMUMS	73D3	1/255

BARO ENCODER

For both the pilots and first officers BARO encoder, repeat as before but in the **Control sent when button pressed** box, select **Kohlsman Inc** and for the **Control sent when button pressed** box, select **Kohlsman Dec** both with a **Parameter** of **1**

BUTTONS

These offsets are from the JET45 listing.

LOCATION	DESCRIPTION	OFFSET	PARAM	IMPLEMENTED	OFFSET TYPE
PILOT PFD	RA/BARO	73D5	X40	YES	Setbit/Clrbit
PILOT PFD	STD	0330	16211	YES	Setbit/Clrbit
EICAS	SUMRY	73F8	X01	YES	Setbit/Clrbit
EICAS	ELEC	73F8	X02	YES	Setbit/Clrbit
EICAS	HYD	73F8	X04	YES	Setbit/Clrbit
EICAS	ELS	73F8	X08	YES	Setbit/Clrbit
EICAS	FLT	73F8	X10	YES	Setbit/Clrbit
EICAS	FUEL	73F8	X20	YES	Setbit/Clrbit
MFD	SYS	73F9	X01	YES	Setbit/Clrbit
MFD	MFD	73F9	X02	YES	Setbit/Clrbit
MFD	CKLST	73F9	X04	NO	Setbit/Clrbit
MFD	TCAS	73F9	X08	YES	Setbit/Clrbit
MFD	WX/TERR	73F9	X10	NO	Setbit/Clrbit
MFD	MAP/PLAN	73F9	X20	YES	Setbit/Clrbit
FO PFD	RA/BARO	73D5	X40	YES	Setbit/Clrbit
FO PFD	STD	0330	16211	YES	Setbit/Clrbit

ENCODERS

These offsets are from the JET45 listing (plus one from the FSUIPC guide).

LOCATION	DESCRIPTION	OFFSET	PARAM	IMPLEMENTED	OFFSET TYPE
PILOT PFD	MINIMUMS	73D2	1/255	YES	Ubyte Inc/Dec
PILOT PFD	BARO	0330	16211	YES	Ubyte Inc/Dec
EICAS	CAS	73FC	1/255	YES	Ubyte Inc/Dec
MFD	M/P RNG	73FD	1/255	YES	Ubyte Inc/Dec
FO PFD	MINIMUMS	???	1/255	YES	Ubyte Inc/Dec
FO PFD	BARO	???	1/255	YES	Ubyte Inc/Dec