

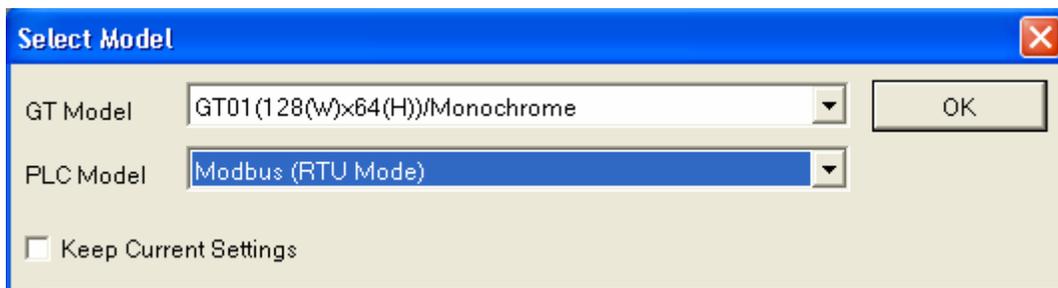
# Using the Panasonic GT01 HMI with Exlar's Tritex Drive

October 13, 2006

## **Configuring the GT to communicate with the Tritex.**

\***BOLD** refers to data fields in the GTWIN software

1. Select File/New from the menu
2. The **Select Model** dialog appears, use the lower drop down to select Modbus (RTU Mode)



3. (A hint dialog will appear telling you to setup the GT Communication settings.) Select File/Configuration/GT Configuration from the main menu. The **GT Configuration** dialog appears. Select the **Basic Setup** tab of the dialog. In the **Basic Communication Area to PLC**, use the **Word Area** drop down to select **GDT0**. Use the **Bit Area** drop down and select **WGRO** as shown. This will stop the GT01 from trying to automatically look for a PLC on the serial port.

GT Configuration - Untitled1

Basic Setup | Communication Parameters | Auto-Paging | Start-up Screen | Setup | Recipe | Line Graph

Title  Eng

GT Model GT01 (128(W)x64(H))/Monochrome

PLC Model Modbus (RTU Mode)

Basic Communication Area to PLC

Word Area  
GDT0 ... to GDT2

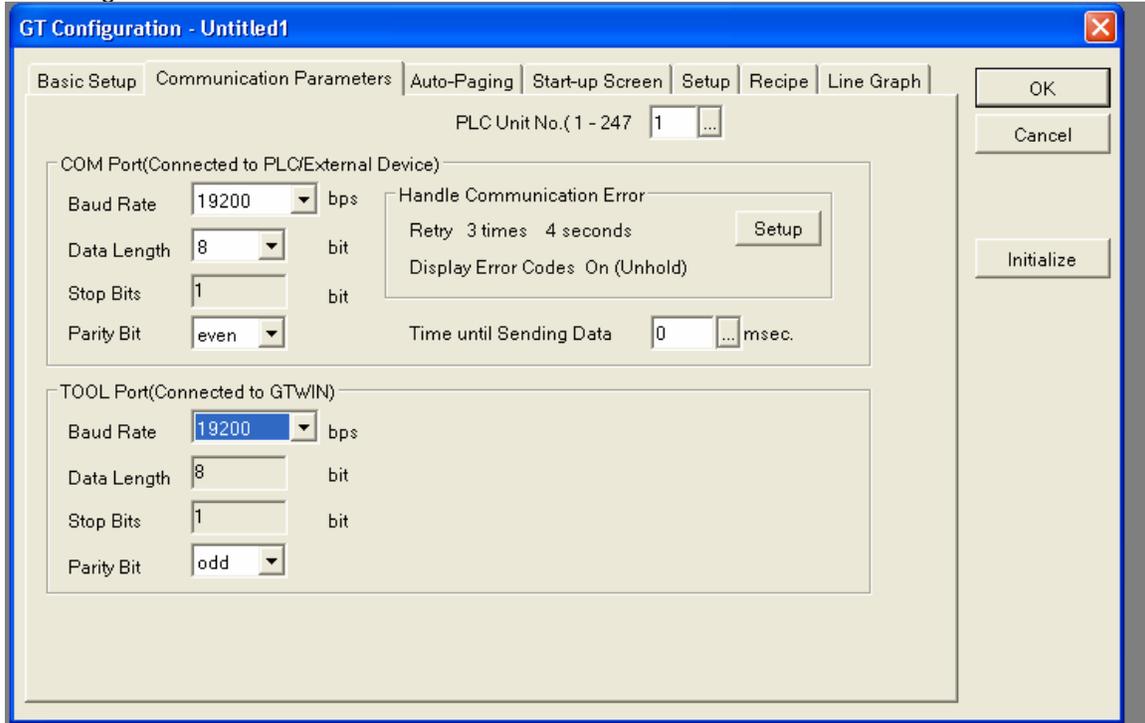
Bit Area  
WGR0 ... to WGR2

OK

Cancel

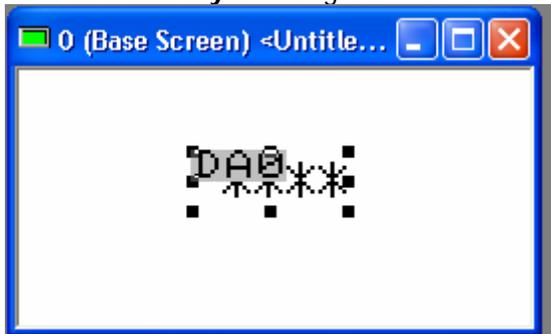
Initialize

4. Select the **Communications Parameters** tab from the **GT Configuration** dialog box. **The PLC Unit No** should be set to the ID of the Tritex drive that you are trying to communicate with. In the **COM Port** group box, set the parameters for the connection to the drive. By default, the Tritex uses the parameters shown in the picture. In the group box for the **TOOL Port**, set the parameters that correspond to the serial parameters of the PC using GTWIN.

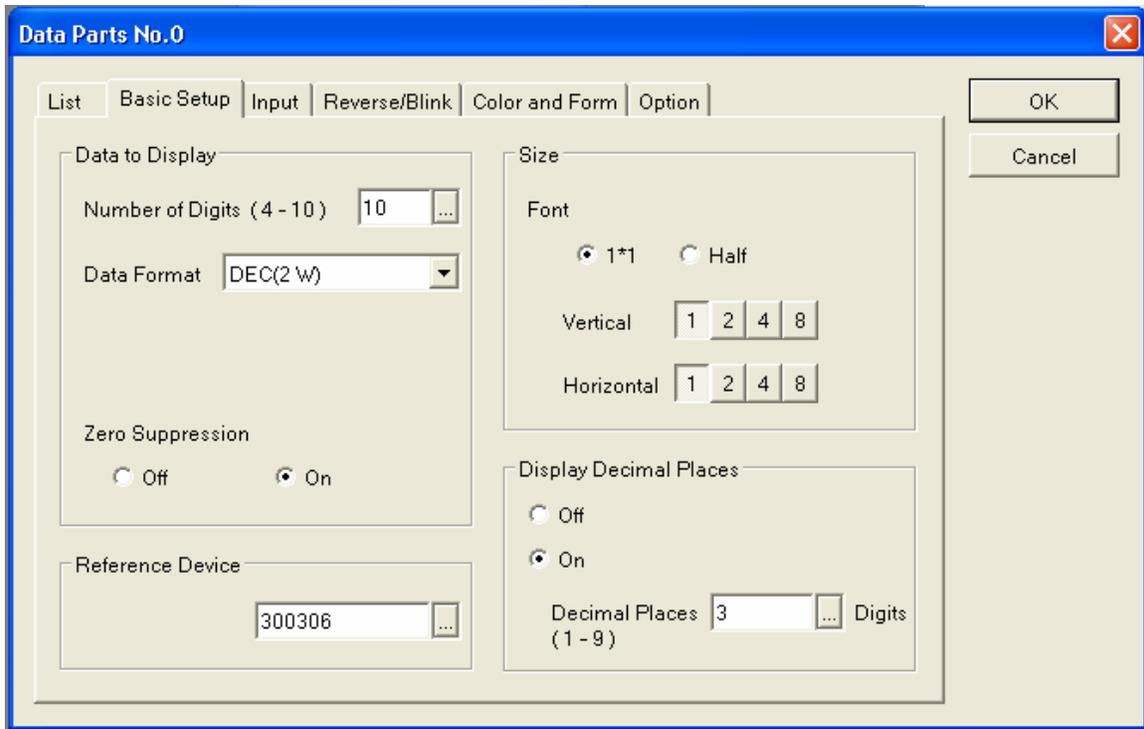


### **Displaying Tritex Data (Example using 32 bit position data)**

1. Select the Base Screen (Screen 0) from the Screen Manager window and open it. Open the **Parts Library** and drag a **Data Part** onto the Base Screen



2. Double Click the **Data Part** on the screen, the editor window will open with the default parameters. Select the **Basic Setup** tab.



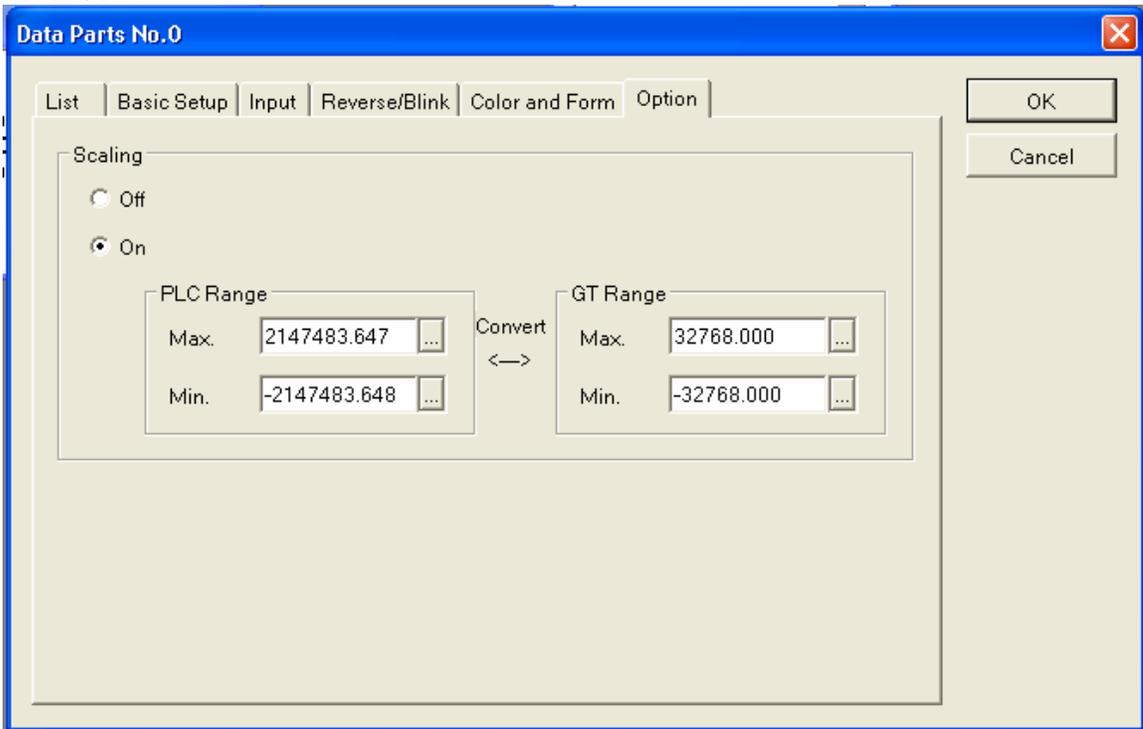
3. For this example, feedback position will be displayed. Use the Tritex Modbus manual to find P Feedback parameter. The table shows it is a Read Only INT32 (signed 32 bit Integer) with a Scale indicated of **16.16**.
4. Use the Data Format dropdown to select **DEC(2W)**. (2 registers, INT32). Use this table for other number types.

Tritex Data Type	GTWIN Data Type
INT16	DEC (1W)
UNIT16	DEC (1W) Unsigned
INT32	DEC (2W)
UINT32	DEC (2W) Unsigned

5. Enter **Number of Digits** of 10. (2147483647 maximum value of 2 Words). 16 Bit data would use 5 digits (32768 maximum value of 1 word)
6. Click the **Display Decimal Places** On radio button, and the Decimal Places Edit will appear. Choose 3 or some other appropriate value for position information in revs.
7. In the **Reference Device** Entry, put the address of the **P Feedback** parameter in the drive. This address is **306**. Position feedback is a read only value, so it should be addressed as a Holding Register. The GTWIN software indicates the register type with the prefix numbers 40=Input Registers (RW), 30=Holding Register (RO), etc. To read a Holding Register (Read Only) parameter, prefix the number with 30xxxx. So in this case the **Reference Device** for Position Feedback is 300306. Enter this number.

- On the same dialog, select the **Option** tab. Click the **Scaling ON** radio button if it is not selected, and it will display the scaling setup. The default values will be displayed based on the number of **Digits** and **Decimal Places** entered in the **Basic Setup** screen. **The PLC Range** values (left side) represent the maximum value of the parameter in the drive ( $2^{32}$ , 2 Words). The numbers on the right side (**GT Range**) represent the displayed value range. In the case of Feedback Position information, the number is represented as 16.16 in the drive. The integer part (left side of 16.16) of this number can be up to 65535 ( $2^{16}$ ). Since these are signed 16 bit numbers, they can range from 32768 to  $-32768$ . Enter this number in the **GT Range Min/Max** fields on the scaling tab.

Another example, if the **Scale** value from the Tritex manual says the representation is 11.5 (see the 16 bit voltage values in the Tritex manual), the integer part of the parameter is 11 bits long and the decimal part is 5 bits long. The parameter's integer maximum value is 2048 and will range from  $-1024$  to  $+1024$ . ( $\pm 2^{10}$  plus the sign bit) This means the value entered in the **GT Range Max/Min** are 1024 and  $-1024$ , respectively. You should be able to transfer this to the GT01 and the **Data Part** will display the position of the drive in Revolutions.



## Writing Data to the Tritex

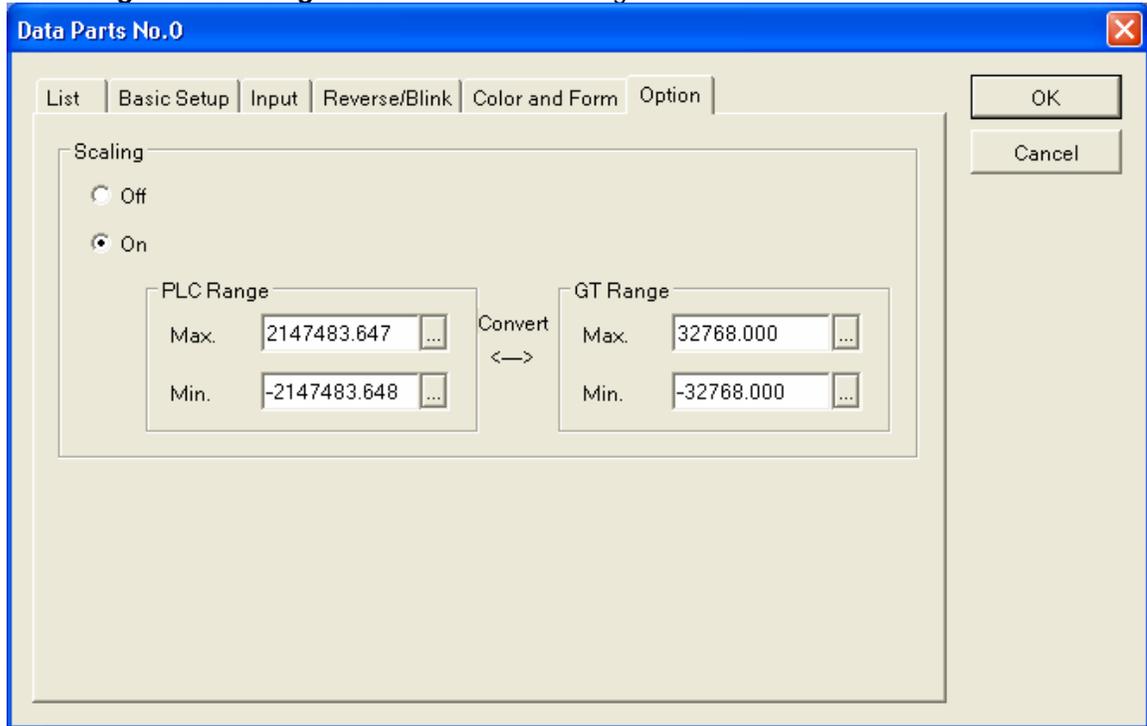
1. Writing values to the Tritex drive starts with the same steps outlined above for displaying data. Drag a **Data Part** onto your screen design, find the address, type and scaling representation from the Tritex manual and enter the values in the **Data Parts** dialog. This example will demonstrate changing Move1's destination position. Move1's position is located at Tritex address 6022. It is an INT32 Read/Write value, with a 16.16 representation. The next picture shows the configuration of the **Basic Setup** tab

The screenshot shows the 'Data Parts No.0' dialog box with the 'Basic Setup' tab selected. The dialog has a blue title bar and a close button in the top right corner. The main area is divided into several sections:

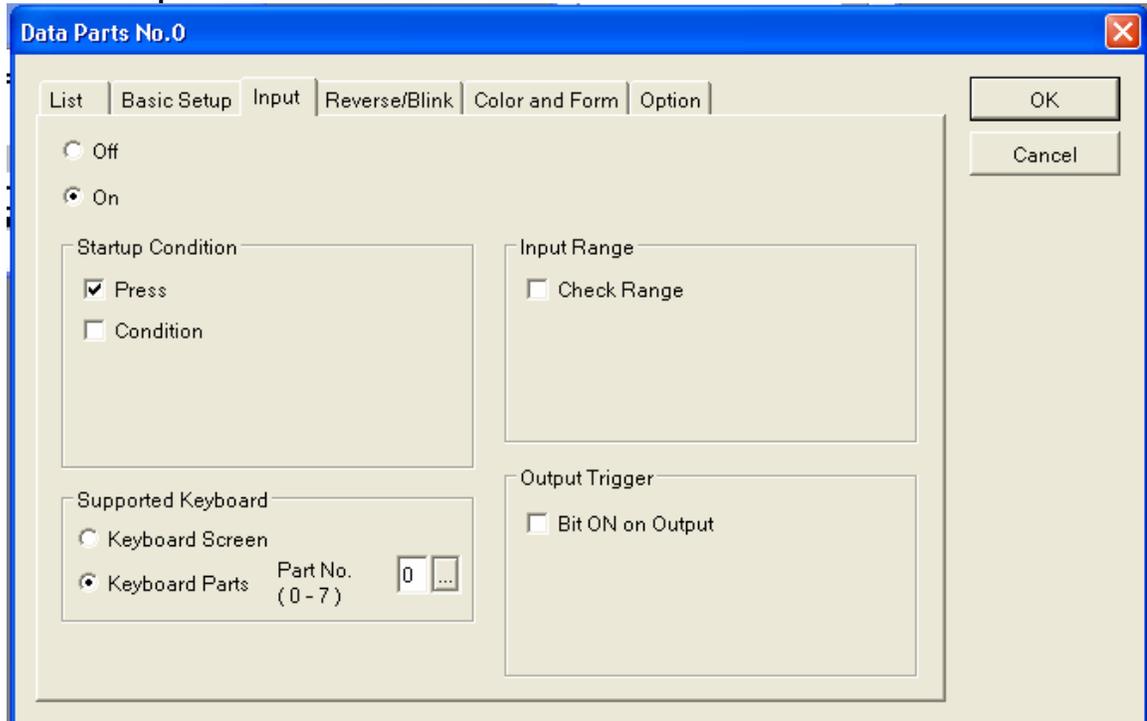
- Data to Display:** Includes a 'Number of Digits (4 - 10)' field set to 10, a 'Data Format' dropdown menu set to 'DEC(2 W)', and 'Zero Suppression' radio buttons with 'On' selected.
- Reference Device:** A text field containing '406022'.
- Size:** Includes 'Font' radio buttons with '1\*1' selected, and 'Vertical' and 'Horizontal' size selection buttons (1, 2, 4, 8).
- Display Decimal Places:** Includes 'Display Decimal Places' radio buttons with 'On' selected, and a 'Decimal Places (1 - 9)' field set to 3.

Buttons for 'OK' and 'Cancel' are located on the right side of the dialog.

- As the scaling is the same for Move 1 position as it is for the Feedback position, the same **PLC Range** and **GT ranges** are used for the scaling.



- Drag a **Keyboard Part** from the Parts palette to your screen design. Note the number of the Keyboard, it is also indicated on the design screen.
- Go back to your **Data Part** and double-click it, bringing up the **Data Parts** dialog again and select the **Input** tab. Make sure the **ON** radio button is selected.

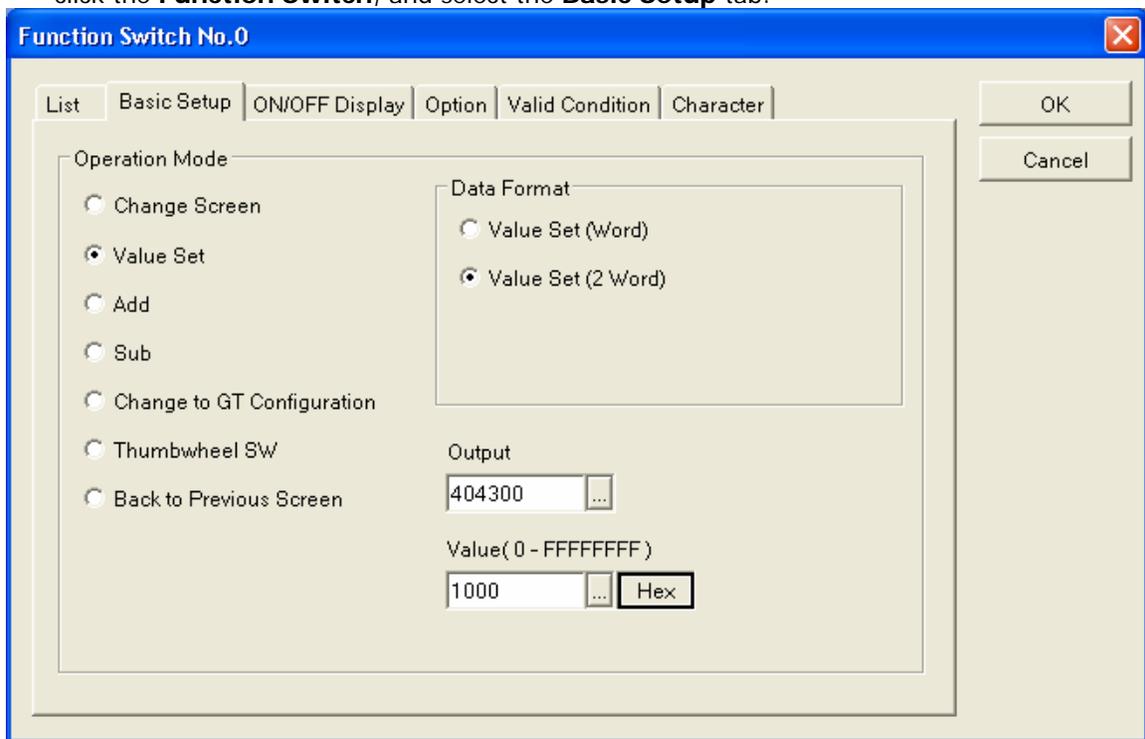


- On the Input tab, in the **Startup Condition**, check **Press**. Check the **Check Range** checkbox if desired. Do **Not** check **Bit ON on Output**, this will cause an error. In the **Supported Keyboard** group, select **Keyboard Parts**, and enter the part number of the keyboard that you just added. Transfer the program to the GT01. Now you should be able to touch the **Data Field** on the screen, and the keyboard should pop up and you can enter a new value for the Move1 Position.

### **Activating Tritex Input Functions with the GT01**

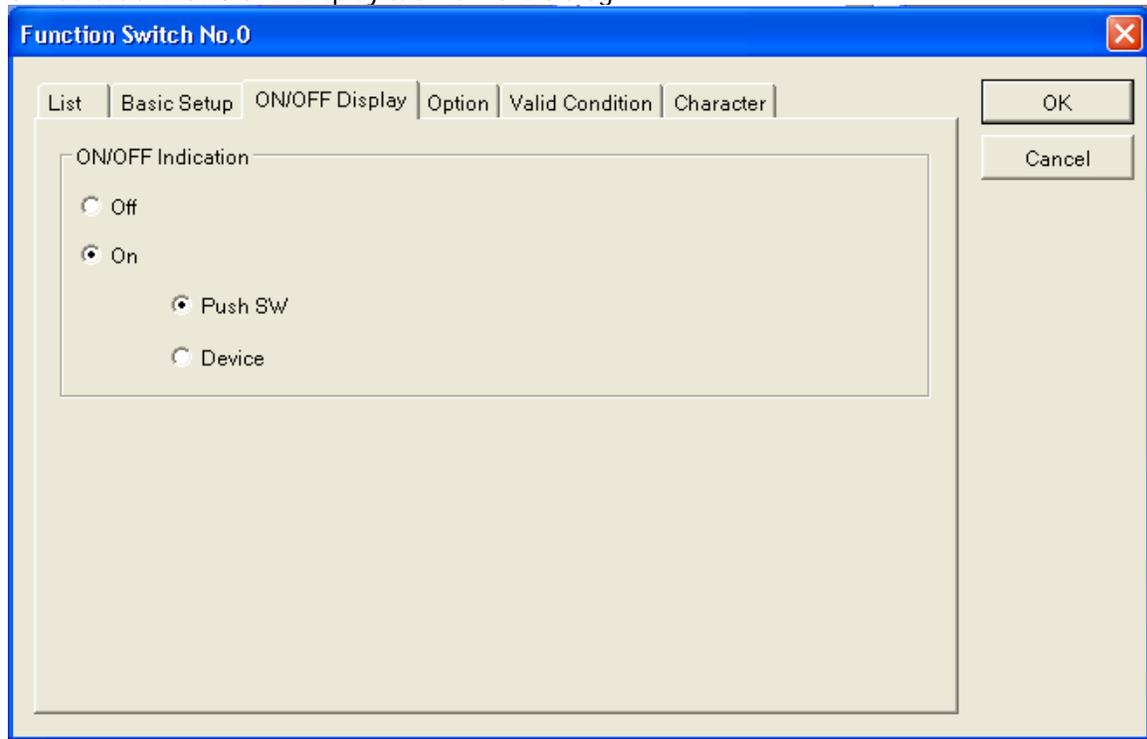
This example will demonstrate executing Move1 from the GT01. This is done by setting the appropriate bit in the Tritex Host Input Functions. The Host Input Function is a 32 bit word, setting each bit activates a different Input Function. The bits in the Host Input Functions are enumerated in the Tritex documentation.

- Select a **Function Switch** from the Parts Dialog box and drop it onto your screen. Double click the **Function Switch**, and select the **Basic Setup** tab.



- In the **Operation Mode** group, select **Value Set**. This will make the button write to the Host Input Function.
- Under **Data Format** select (2 Word), as the Host Input Function are specified as UINT32.
- The Tritex address for the Host Input Functions is 4300. This is a Read/Write address, so we prefix it with 40xxxx for the GT01. Enter the number 404300.
- Look up the mask value for the Host Input Function you would like to activate in the Input Functions Enum table. In this case, the Value for MOVE1\_MAINTAINED is 0x00001000 (4096 Decimal). You can enter the number in Hex or Decimal, Hex is shown above in the Value field.

6. Select the **ON/OFF** Display tab from the dialog



7. Either select **OFF** for the **On/Off Indication**, or select **ON** and **Push SW**. This is important; the button will otherwise try to read a bit in the Tritex to show its state. This will cause an error on the GT01 (ER01), since the Tritex does not support writing bits. Any GT01 screen part that has an option of **On/Off Indication** will default to **Device**. This **MUST** be changed or your part will generate an error.
8. Transfer your setup to the GT01. Pressing the new **Function Switch** should execute Move1.

More than one Host Input Function can be activated with one switch (i.e., Jog and Jog Fast), but each switch will overwrite the data sent by another **Function Switch**. (They are NOT or'ed). To clear an input function, create another **Function Switch** that writes a '0' to the location.