

分類/Classification	□ tDS	□ tGW	□ PETL/tET/t	PET 🗖 DS/PDS/PI	PDS 🛛 tM	□ tM-752N	
	□ I/O Card		U VXC Card	□ VxComm	☑ Other (TouchPAD)		
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Q: How to use TouchPAD as Modbus RTU Slave?

A: Follow the procedure described below:

Step 1: Connect the COM port of the Host PC to the COM1 (RS-485 bus) of the TouchPAD (e.g., TPD-433).
Step 2: Apply power to the TouchPAD (e.g., TPD-433). Note that the valid power voltage range depends on your TouchPAD. Refer to the TouchPAD hardware user manual for details.



Step 3: Open the HMIWorks software, click the "New Project" icon to create a new project.





Step 4: In the "New" dialog box, configure the parameters for the new project as follows:

- 1. Click the name of the TouchPAD model to select it, TPD-433 in this case.
- 2. Enter a name for the project.
- 3. Select the location where the project should be saved.
- 4. Select the orientation for the display.
- 5. Select the Default Programming Type.
- 6. Click the **"OK"** button to save the configuration and close the dialog box.



Step 5: Click the "Register Devices
(I/O)" option from the "HMI" menu to open the "Devices" dialog box, or press
F3.





Step 6: In the "Devices" dialog box, select "Modbus RTU Slave" from the "TouchPAD is" drop down menu.

B Devices					
Device information	Tag Name	IO Type	Start Address	Default Value	Comment
TouchPAD is: Modbus RTU Slave Device Series: Modbus TCP Master Connection: Modbus TCP Slave Modbus RTU Slave Modbus RTU Slave Modbus RTU Slave Select	P				
Device Name: Assign Net ID: 1	<				•
	<u>O</u> K <u>C</u> ancel				Clear All <u>T</u> ags

Step 7: Select **"Create New..."** from the "Connection" drop down menu to open the "New/Edit Connection..."dialog box.

- **Step 8:** In the "**New/Edit Connection...**" dialog box, configure the connection information of the TouchPAD in the following manner:
 - 1. Select "COM1" from the "Connection Interface" drop down menu.
 - 2. Select the **Baud Rate and Data Format of the TouchPAD** from the "Baud Rate", "Data Bit", "Parity" and "Stop Bit" drop down menu. (e.g., 115200, 8, None, 1)
 - 3. Click the **"OK"** button to save the configuration and close the dialog box.

Devices									
Devices Devices Devices Device information TouchPAD is: Device Series: Connection: Model Name: Device Name: Net ID:	Modbus RTU Slave Profiles(MRTUS) Create New 1 1	▼ Select Assign	↓ ↓	Name New/Edit Connection Connection Name Connection Interfa Note: The interfac devices, not for de Serial Connection Baud Rate Data Bit Parity Stop Bit	IO Type n ace SE te is for cor ownloading on Settings [1 [8 [0 [1] [1] [1] [1] [1] [1] [1] [1]	Start Address R_1 M1 mmunication bet firmware. 15200 (None)	Default Value	Comment sign Name D and I/O	Tags
					\langle	<u>OK C</u> an	cel		



Step 9: In the **"Devices"** dialog box, click the **"Select"** button to open the "Select [Profiles(MTCPS)] Series..." dialog box.

Step 10: Select the I/O channel number depends on the requirements for you and click the **"OK"** button.

Devices	Select (Profiles(MTCPS)) Series	
Device information Tag Name TouchPAD is: Modbus RTU Slave Device Series: Profiles(MRTUS) Connection: SER_1 Model Name: Select Device Name: Assign Net ID: 1	AlO16 AlO32 DIO16 DIO16AlO8 DIO32 DIO32AlO16 DIO64 DIO64AlO16	nent
	<u>OK</u> <u>Cancel</u>	

Step 11: Verify that the **Device information is correct** (e.g., the Model Name, Device Name, Net ID, Tag Name, IO Type, Start Address and Default Value, etc.) and then click the **"OK"** button to save the configuration and close the "Devices" dialog box.

evices								
Device information			Tag Name	IO Type	Start Address	Default Value	Comment	
		-	DIO0	DIO	0	0		
TouchPAD is:	Modbus RTU Slave	•	DIO1	DIO	1	0		
Device Series:	Profiles(MRTUS)	-	DIO2	DIO	2	0		
Connection:	SED 1	-	DIO3	DIO	3	0		
Madel News			DIO4	DIO	2 4	0		
Model Name:	DIO16	Select	DIO5	DIO	5	0		
Device Name:	Dev_DIO16_1	Assign	DIO6	DIO	6	0		
Net ID:	1)	DIO7	DIO	7	0		
			DIO8	DIO	8	0		
			DIO9	DIO	9	0	1	
								+
		B		ancel			Clear A	All <u>T</u> ags



Step 12: The creation of the "Dev_DIO16_1" device is now complete.



Step 13: Use the following procedure to create a DO sample program:

- 1. Select a "Button" object from the "Libraries" pane to represent the DO0 tag.
- 2. Drag the **"Dev_DIO16_DIO0"** tag (DO channel 0) from the "Workspace" pane to the desired position on the design frame.



The creation of the DIO sample program is now complete.



Step 14: Once the sample program is complete, it can be uploaded to the TPD-433 module via USB. The detailed configuration and wiring information is as follows:

 Power off the TPD-433 module and use a flat-head screwdriver to set the Rotary Switch on the TPD-433 module to "Update AP" mode (position 9). Note that the default configuration is "Run" mode (position 0).



 Connect the TPD-433 module to the Host PC using a CA-USB10 cable, and then Power-on and reboot the TPD-433 module.





 The message: "MiniOS8 is running. Waiting for connection..." will be displayed on the TPD-433 module.



Step 15: The sample program can now be uploaded to the TPD-433 module. Follow the procedure described below:

 In the HMIWorks application, click the "Run (Build & Download) F9" item from the "Run (Build & Download)" menu, or press F9.



2. The **"Download in progress ..."** dialog will be displayed showing the progress of the update.

🕞 Frame1 - [demo.hwd]		x
🕼 File Edit View HMI Layout Arrange Run (Build & Download) Window Help	-	8 ×
Workspace Toolbox	Inspector Libraries	×
The file file	Dutter (14)	•
Download in progress		<u> </u>
	bud	E
	hwd	
E → Device	.hwd	
- <u>Za Dev DK</u> 1%	hwd	
	wn0.hwd	
- 🔁 Dev_DIQ	wn1.hwd	
	1.hwd	
	wn0.hwd wn1.hwd	
	ip0.hwd	
- C Dev DI016 1 DI09	Btnivieup0.hwd	
C Dev_DIO16_1_DIO10	BtnMEUp1.hwd BtnME0.bwd	-
- 2 Dev_DIO16_1_DIO11		
- Concernence -		
- Dev_DIO16_1_DIO14		
C Dev DIO16 1 CH DIO		
	Size: 67x79_47_KB	
Results	0120. 01X10, 41 KD	×

 Once the upload is complete (i.e., when the progress indicator reaches 100%), power off the TPD-433 module and set the Rotary Switch to "Run" mode (position 0).





4. **Power-on and reboot** the TPD-433 module so that the module is operating in **"Run" mode**. The TPD-433 module will then execute the DIO sample program.



Step 16: Use the Modbus Master program (e.g., ModbusMasterToolPC.exe) to verify the results of the DO functions test in the following manner.

- 1. The **ModbusMasterToolPC.exe** can be downloaded from the ICP DAS web site as following web: <u>http://ftp.icpdas.com/pub/cd/8000cd/napdos/modbus/modbus_master_tool/</u>
- 2. Launch the "ModbusMasterToolPC" program, click the **"Definition"** item from the **"Setup"** menu to open the "Definition" dialog box.
- 3. In the "Definition" dialog box, set the "Slave ID", "Function", "Address" and "Length" items depends on the TouchPAD (e.g., TPD-433), and click the "OK" button.





- 4. Click the **"Connect"** item from the **"Connection"** menu to open the "Connect" dialog box.
- In the "Connect" dialog box, select appropriate COM Port number, Baud Rate and Data Format from the relevant drop down options depend on your PC COM port that connect to TouchPAD. (e.g., "COM7", "115200", "8", "0-None Parity" and "1")
- 6. Click the **"RTU"** option button in the "Mode" field and click the **"OK"** button.

💀 Modbus Master	Tool V1.1.1.0 20	.4/4/30 C:\Users\Tammy\Desktop\ModbusMasterTooIPC\MyFileWor 🗖 🔳 🔀	
File Stup C	connection Wi	dow About	
Masteri	Connect		
Slave ID = 1	Disconnect		
Error = 0	· ·		
Base 0(Hex)	Base 1	Value Description	
0 (0x0)	00001 =	0	
1 (0x1)	00002 =	0	
2 (0x2)	00003 =	0	
3 (0x3)	00004 =	0	
4 (0x4)	00005 =	0	
5 (0x5)	00006 =	0	
6 (0x6)	00007 =	0	
7 (0x7)	= 80000	0	
8 (0x8)	00009 =	Connect	×
9 (0x9)	00010 =	Interface: COM7 - Scan Interval(ms): 200	
10 (0xA)	00011 =	Baudrate: 115200	
11 (0xB)	00012 =		
12 (0xC)	00013 =	Data Bit: 8 Delay Between Poll(ms): 10	
13 (0xD)	00014 =	Parity: 0-None Parity	
14 (0xE)	00015 =		
15 (0xF)	00016 =	Stop Bit: 1	
		6 Mode: RTU ASCII	$\langle \rangle$
			<u> </u>

7. Tap the **DOO** icon on the TPD-433 module.

FΆ



 In the "ModbusMasterToolPC" program, check that the "00001" item (DO channel 0) has changed between values (e.g., 1 or 0).

🖳 Master0 Slave ID – 1. E	C – 1			
Siave iD = 1, F Error = 0	0-1			
Base 0(Hex)	Base 1	Value	Description	
0 (0x0)	00001 =	1		
1 (0x1)	00002 =	0	8	
2 (0x2)	00003 =	0	0	
3 (0x3)	00004 =	0		
4 (0x4)	00005 =	0		
5 (0x5)	00006 =	0		
6 (0x6)	00007 =	0		
7 (0x7)	= 80000	0		
8 (0x8)	00009 =	0		
9 (0x9)	00010 =	0		
10 (0xA)	00011 =	0		
11 (0xB)	00012 =	0		
12 (0xC)	00013 =	0		
13 (0xD)	00014 =	0		
14 (0xE)	00015 =	0		
15 (0xF)	00016 =	0		

Refer to the **"Demo_RTU_Slave_VPD130"** demo program for more detailed information. The **"Demo_RTU_Slave_VPD130"** demo can be found in the: <u>CD:\NAPDOS\TouchPAD\Demo\Others\VPD-130</u> folder on the companion CD, or can be downloaded from <u>http://ftp.icpdas.com/pub/cd/touchpad/demo/others/vpd-130/</u>