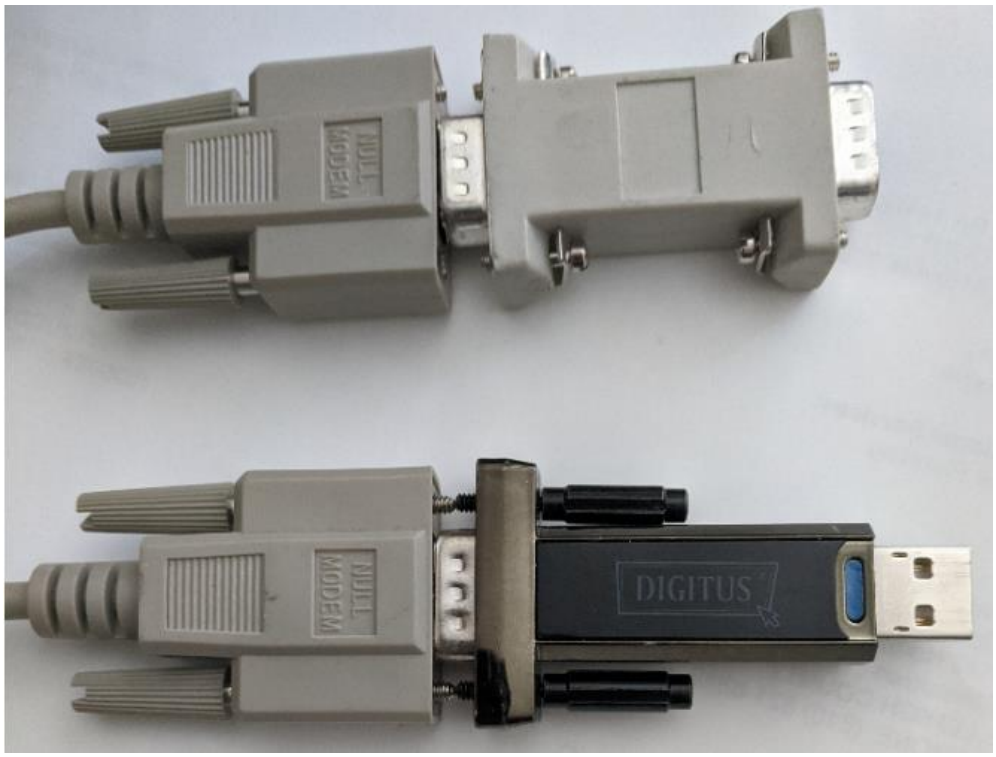
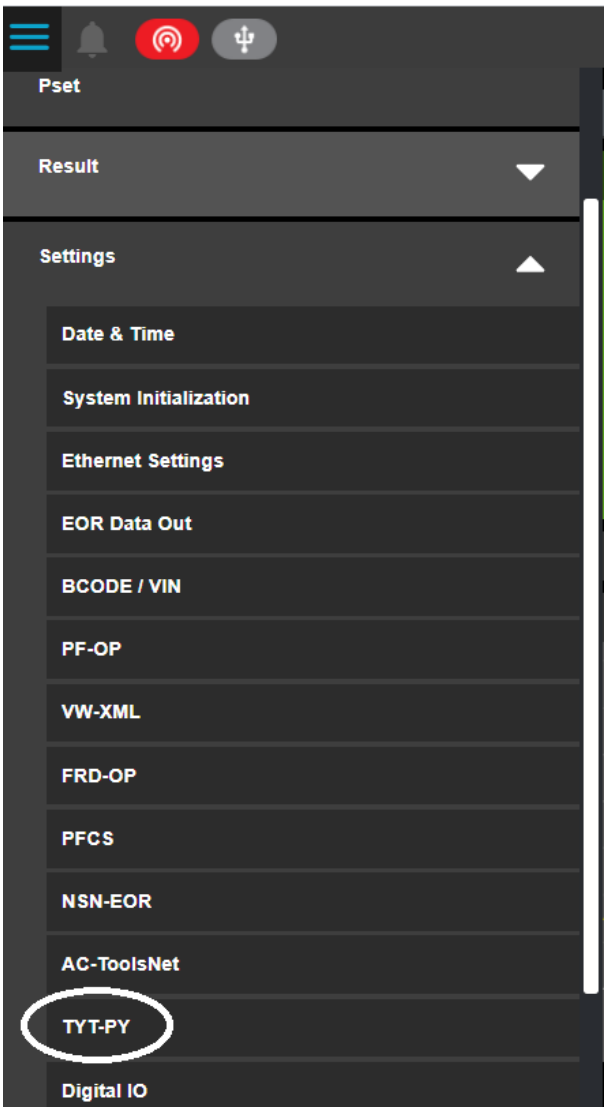
Steps to setup the INSIGHTqcx for TOHO communications.

1. The following hardware is needed to connect from the controller to the TOHO system.
    a. 9-pin D-Shell serial RS-232 null-modem cable
    b. USB to serial convertor to connect at one of the serial cable. We use Digitus, but others may work too.
    c. 9-pin gender changer (depends what is on the TOHO side)



2. Ensure the controller has the proper Advanced License (TYT-PY feature included). You should see TYT-PY in the Settings Menu as shown below.

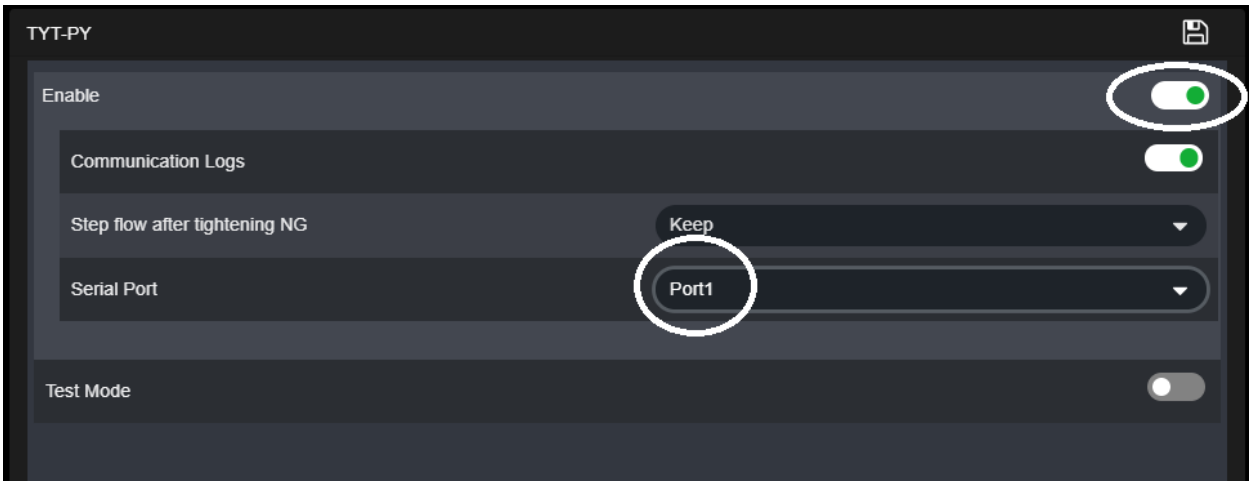


3. Enable TYT-PK and select the Port # that is connected to the Toho system.

   Note: Port # is from the controller. The QCX controller has four USB ports, two vertical and two horizontal, identified from 1 to 4. Make sure the selected port is not used for other protocols.

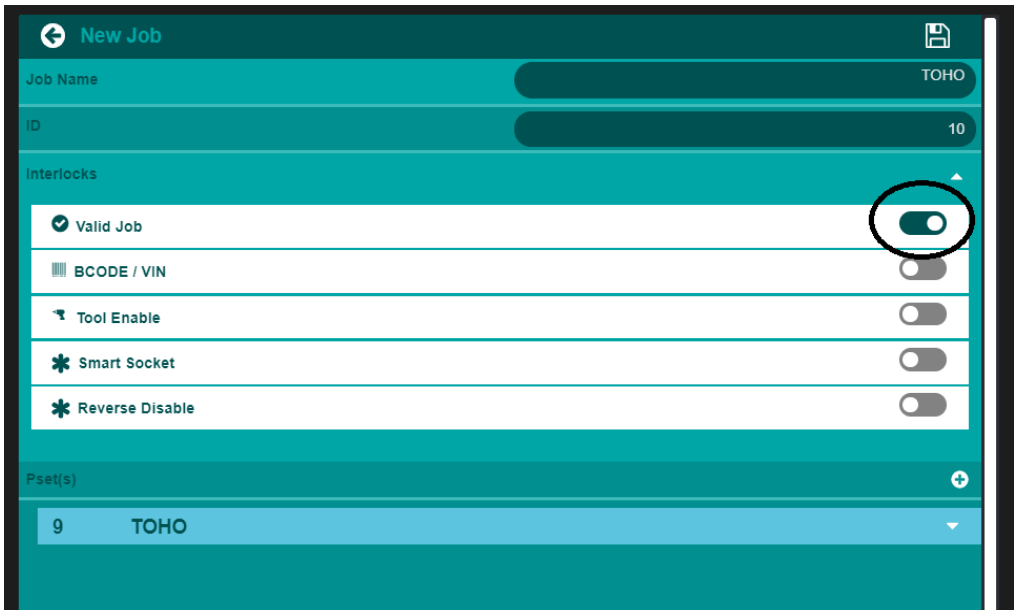
4. For ‘Step flow after tightening NG’, select the option that matches the TOHO system.

   Example: If ‘Next’ is selected for ‘Step flow after tightening NG’ then both QCX and TOHO system should be set to ‘Next’.



5. ‘Fastening Time’ and ‘Free Run Angle’ parameters have been added to Pset as part of the Toho feature.
    a. The Fastening Time parameter has a High Limit range of 1 to 520 sec, and Low Limit range of 0 to 519 sec. Fastening Time is the time elapsed from snug torque to final torque. These values help in adjusting fastening time.
    b. Free Run Angle parameter has a High Limit range of 1 to 320000 degrees and a Low Limit range of 0 to 31999. Free Run angle is the rotation angle value from tool trigger to snug torque. This differs from Final Angle, which is rotation angle value from snug torque to final torque.

6. Job Settings.
    a. ‘Valid Job’ should be enabled for Interlocks.



b. Tool Enable, Smart Socket and Barcode Interlocks are not applicable for TYT-PY protocol.

7. Job Global Settings
    a. Job Selection->External MES
    b. Boot Job->Enabled

Sequence of operation:

1. Pokayoke (TOHO) system sends a work order to the controller with a sequence of jobs to be completed and # of shots (fasteners) for each job.
2. Controller sends quality data (EOR) pertaining to each fastening operation to Pokayoke (TOHO) system.
3. Once a work order is completed, tool locks until next work order is received.

Note: If using Barcode information, apply the following settings on the Barcode/VIN Settings screen.

a) ‘Select Source ‘ as MES
b) ‘Select Length’ as 20
c) ‘Check Length’ as ‘None’